mirabyte

FrontFace for Public Displays

User and Configuration Manual

Version 3.6.9

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1 Introduction

FrontFace for Public Displays is a very powerful and flexible **digital signage software** application that allows you to easily display any kind of media content such as **images, videos, Web sites** (including Flash, HTML5 video, etc.), **text** and even **printed documents (E-Paper)** on public displays and digital signage appliances.

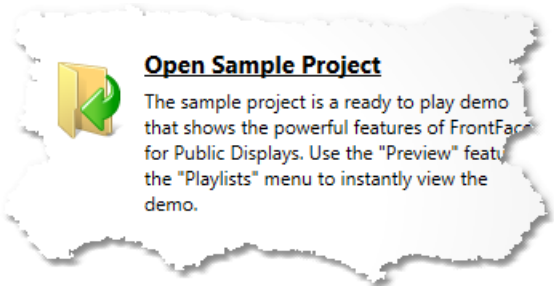
FrontFace includes very useful features such as **scheduling**, **live content updates** while the application is running, **cloud replication** (for deploying content over the Internet) and much more!

FrontFace for Public Displays was developed with three main objectives in mind:

- Creating a **highly intuitive and easy-to-use/easy-to-install** application.
- Providing a **very powerful and feature-rich application** in order to allow a board range of possible use cases and applications.
- Guaranteeing **a maximum of stability and reliability**.

How to get started?

Visit the *FrontFace for Public Displays* Website for some quick start video tutorials or follow the Step-by-Step Setup Tutorial from this manual in order to get started. In addition to that a sample project is also included with this installation package. To open the sample project, the video tutorials or this manual simply use on the quick start link on the welcome page of the *Display Assistant*!


Open Sample Project
The sample project is a ready to play demo that shows the powerful features of FrontFace for Public Displays. Use the "Preview" featu
the "Playlists" menu to instantly view the demo.

Notice: In case of any **questions** or **problems** please feel free to contact mirabyte technical support! Please also take a look at the "Troubleshooting" section of this documentation.

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2 Technical Overview

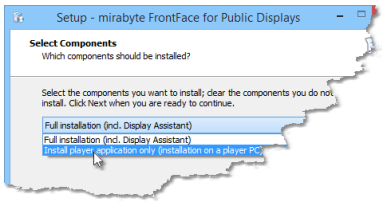
The *FrontFace for Public Displays* software consists of two main components (applications):

- **FrontFace Player Application**
  ("FrontFace Player.exe")

- **Display Assistant**
  ("FrontFace Display Assistant.exe")

Normally, these application are being installed on different computers. Install the *FrontFace Player Application* on the computer(s) to which your screens are connected to. The other application, the *Display Assistant*, is used to (remotely) control and update the *FrontFace Player Application* from another PC (which is usually a common workstation PC that can also be used for other purposes).

For convenience, the **installation package** has a special option for only installing the player application (installation on a player PC) and the full installation (incl. Display Assistant) option. The player application displays your playlists on the screens according to the configuration that have defined using the *Display Assistant*. The player application also automatically cares about updates when new content is deployed using the *Display Assistant*.


Setup - mirabyte FrontFace for Public Displays
Select Components
Which components should be installed?
Select the components you want to install; clear the components you do not install. Click Next when you are ready to continue.
Full installation (incl. Display Assistant)
Full installation (incl. Display Assistant)
Install player application only (installation on a player PC)

The *Display Assistant* helps you to manage and configure your screens and the display content. All content and configuration data is stored locally as a so called *project*. A single project can be used to control multiple player PCs and screens. When everything is configured correctly the *Display Assistant* is then used to automatically deploy the content to the player PCs. Prior to that, the *Display Assistant* can also be used to test and to preview the playlists on the local computer.

After the content has been deployed to the player PCs these are then running autonomously. A separate server or a permanent network connection is not required. A player PC can also be run completely offline. In this case content updates are deployed using an USB flash drive ("plug & play").

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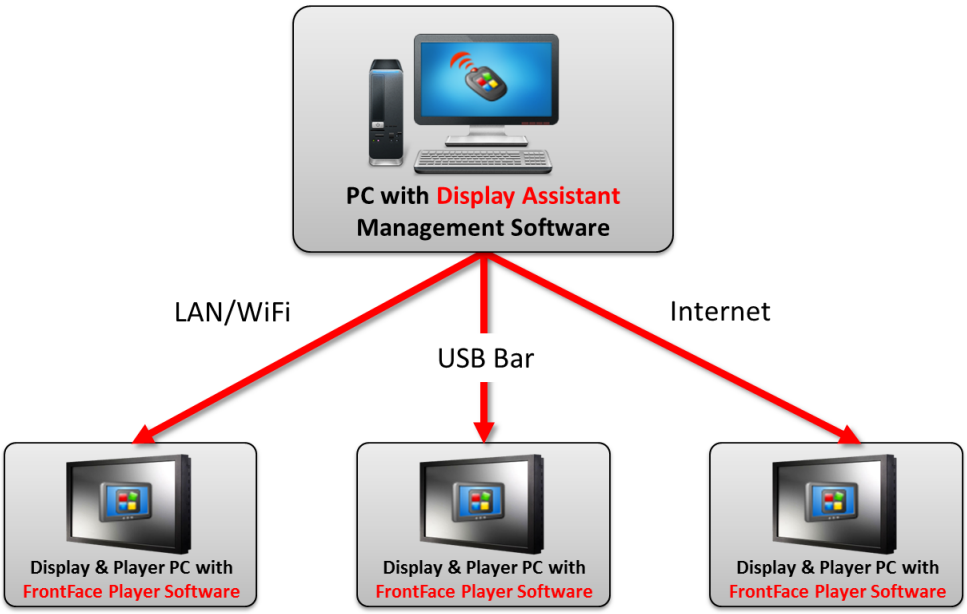
PC with Display Assistant Management Software
LAN/WiFi
USB Bar
Internet
Display & Player PC with FrontFace Player Software
Display & Player PC with FrontFace Player Software
Display & Player PC with FrontFace Player Software

Fig.: The different ways of deploying content to player PCs which are supported by FrontFace

Hint: For more information on how to install and use these applications, please refer to the "Simple Step-by-Step Setup Tutorial".

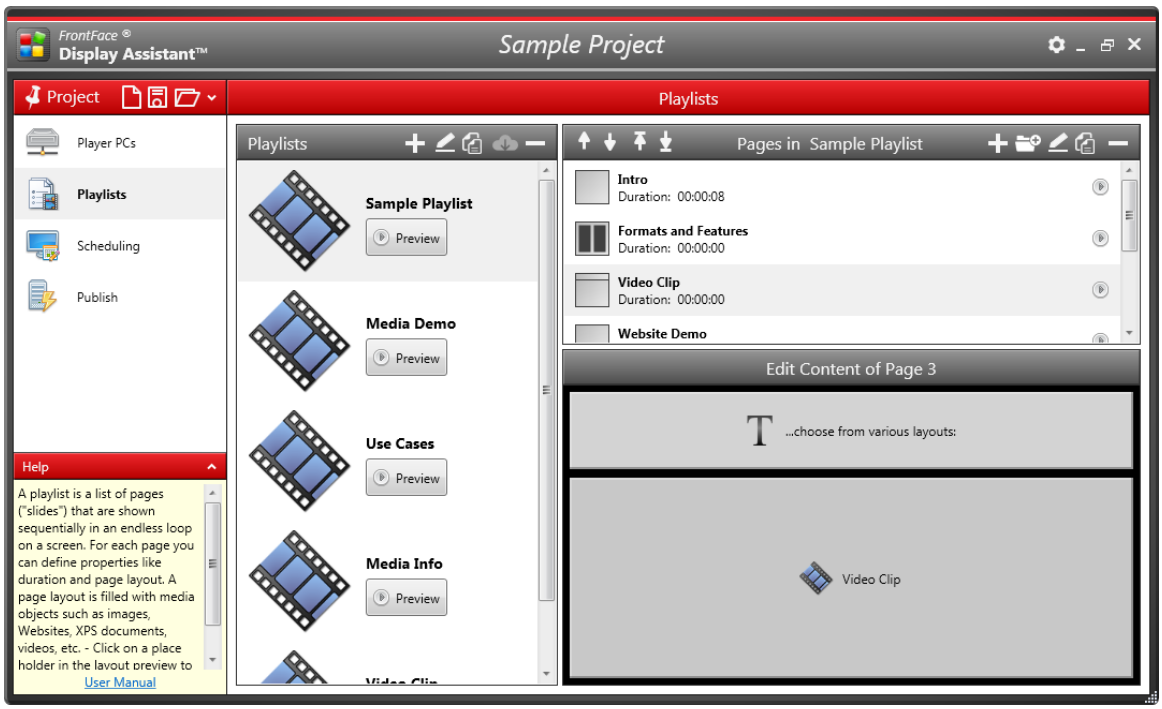

Fig.: The Display Assistant application allows you to manage your player PCs, contents and schedules conveniently

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All content (media files, configuration, playlists, schedules, etc.) are stored in a so called *"project"*. A project can be saved at any location (either on a local computer or on a network share in order to allow multiple users to access the project). The *Display Assistant* is used to create, edit and save projects. In order to deploy the content to a player PC the *"Publish"* feature of the *Display Assistant* is used. It copies all the required files using an intelligent mechanism into the *"Content Update Folder"* of the player PC. This folder is a local folder on the player PC which is either made available externally as network share or which is replicated using a cloud storage service. The Content Update Folder can also be located on a USB thumb drive (in case the offline updating method has been selected). For more details please see the section "Publishing to Player PC(s)".

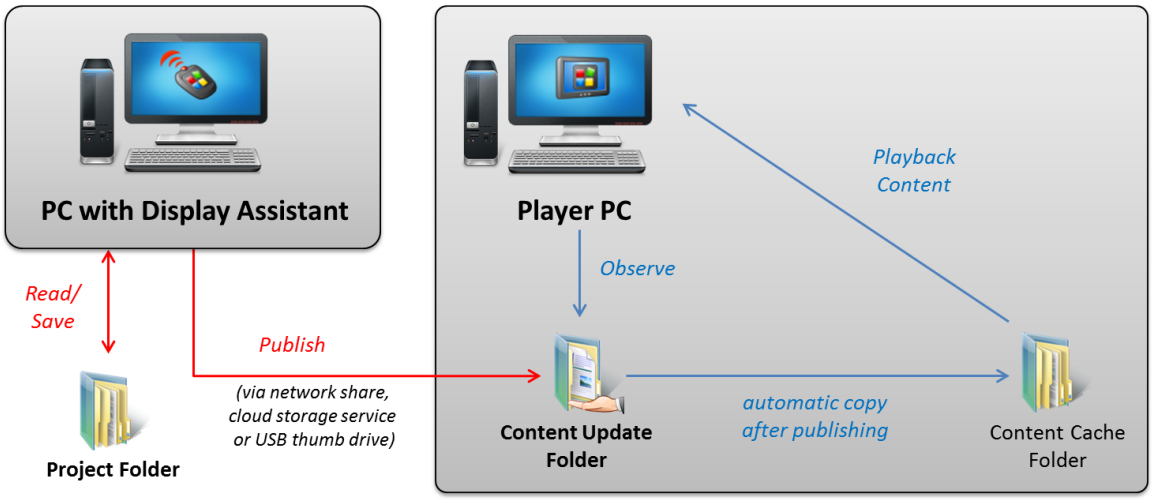

Fig.: Folder-based concept of the update and data storage mechanism of a player PC. The red arrows represent the operations performed by the Display Assistant whereas the blue ones are performed automatically in the background by the player application and is only shown here for information purposes.

The player PC permanently monitors the Content Update Folder for changes and automatically reacts on updates. In case new data from a recently executed publishing process has been detected the data is validated and then loaded into the so called *"Content Cache Folder"* by a background task. This local folder serves as persistent data storage and is used for playing back media files in actual operation mode. Due to this concept the player PC can can be operated autonomously without requiring any permanent network connection. Even after a restart of the player PC the previously published content is still available.

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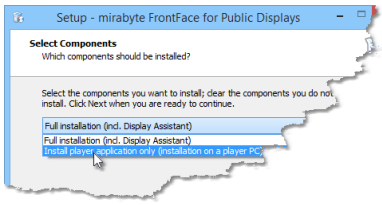
3 Step-by-Step Tutorial

This tutorial explains "step-by-step" how to setup a player PC as well as another PC for controlling/ managing your display. Both PCs communicate with each other using a simple network share in the local network. In case you only want to use a single PC which serves as player PC (addressing the secondary screen) and for managing the content please also make sure that you have read the section "Shared use of a PC as Workstation and Player PC"! For other deployment scenarios, please see "Publishing to Player PC(s)".

Hint: On the Product Website of *FrontFace for Public Displays* you also find some helpful video tutorials that show you how to install and use the software step-by-step.

Step 1: Player Application Installation

1. First, install the *FrontFace for Public Displays Player Application* on the computer to which your screens are connected to (referred to as **"player PC"**). Please choose the installation type **"Install player application only"** and make sure that you have selected the option to automatically create a network share for the so called "Content Update Folder" that serves as link between the player application and the *Display Assistant*. By default the name of the network share that is created by the installation wizard is


Setup - mirabyte FrontFace for Public Displays
Select Components
Which components should be installed?
Select the components you want to install; clear the components you do not install. Click Next when you are ready to continue.
Full installation (incl. Display Assistant)
Full installation (incl. Display Assistant)
Install player application only (installation on a player PC)

\\<PCNAME>\FrontFace Player
(where <PCNAME> stands for the network name of the player PC)

This share points to **"C:\ProgramData\mirabyte\FrontFace for Public Displays \FrontFace Player\"** on the player PC. Alternatively you can also create that folder manually on the player PC and make this folder available as network share on the local network.

2. Start the *FrontFace for Public Displays Player Application* on the player PC.

Notice: If you did not select the option to automatically create a *Content Update Folder* in the previous step (only then!) you will be promoted to select the *Content Update Folder* upon the first start of the *FrontFace Player Application*. Please create a new, empty folder on the player PC and select this one during start up. Also make sure that you make this folder available as a network share in your local network.

3. After starting the player application a black screen with the FrontFace logo and a notice that no content has yet been published will appear. In order to exit the player application press the **ESC key** or leave the application running. As soon as your first content has been deployed to the *Content Update Folder*, the *FrontFace Player Application* will automatically pick it up and display it.

   Furthermore it is recommended to configure the player PC in a way that it boots without requesting a password entry and to automatically start the *FrontFace for Public Displays Player Application*. Additionally you should configure the PC for continuous operation mode (both standby mode and screensaver disabled). All these settings can easily be applied with one click using the free *FrontFace Lockdown Tool* (please see section "Continuous Operation Mode Configuration") which is available separately.

Hint: Depending on the operating system that you are using (Windows Vista, 7 or 8) on the player PC it might be required that you enable *"access without password"* in the *"System and Sharing Center" (Control Panel)* in order to be able to access the network share

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remotely. Alternatively you can also use a user account and password of the player PC to remotely log into the player PC for accessing the network share. It is recommended that you test if you can successfully access the *content update folder* from a remote PC using the *Windows Explorer* before you proceed. For more details on this subject, please refer to this online information resource.

Notice: You should also make sure that date and time of the system clock of the player PC is set correctly. Otherwise there might be problems when using the scheduling feature of FrontFace!

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Step 2: Installation of the Display Assistant

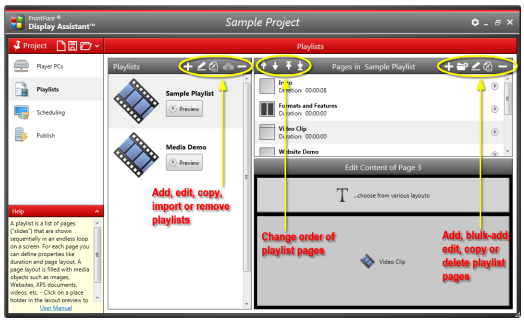
4. Install *FrontFace for Public Displays* on your computer that will be used to remotely manage the content and the screens. Please choose the installation type **"Full installation"** for this computer.

5. Start the *Display Assistant* application on your computer and create a new project. A project contains all content and configuration information of a screen presentation.

6. On the welcome page of the *Display Assistant* please click on **"Click here for Quickstart and Tutorial"**. Then choose **"Create New Project"** in order to create a new project with a pre-configured setup for a single player PC with a single screen.

7. In the **"Playlists"** section an empty playlist has already been created. Add a new page to the playlist by clicking on **"+"** icon above the pages list.

8. Select a page layout for the new page. You can also adjust basic properties such as display duration and a transition effect.


Sample Project
Add, edit, copy, import or remove playlists
Change order of playlist pages
Add, bulk-add, edit, copy or delete playlist pages
Fig.: Creation of playlists with the Display Assistant

9. A schematic preview of the selected page layout is shown in the application (**"Edit Content of ..."**). Click on one of the containers within the layout to assign a content to it (e.g. a picture). Empty containers have a green "+" icon. To view a preview of the current playlist simply click on the **"Preview"** button.

10. You can also adjust basic configuration options of the playlist: Simply go to the **"Playlists"** list and click on the "pen" icon above the list. You can e.g. configure a news ticker or define default values for options like page duration or page transition effects.

11. Repeat steps 8 to 9 in order to add further pages to the playlist. When you are done please click on **"Scheduling"**. As you can see the playlist has already been assigned to the pre-configured screen. By default the scheduling feature is disabled and you can assign a playlist directly to a screen. But it also possible to activate the more advanced scheduling feature in order to define certain time slots or dates when a specific playlist is supposed to be shown. For more information about managing schedules, please see the section "Controlling Screens and Schedules".

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Step 3: Content Deployment / Updating the Player PC

12. Click on **"Player PCs"** in order to select the *Content Update Folder*. By default the name for the network share that you have to enter here is **\\<PCNAME>\FrontFace Player** (see step 1 for details). Please replace **<PCNAME>** with the network name of your player PC (e.g. **\\ASTERIX\FrontFace Player**).

13. Go back to **"Publish"** and click on **"Publish"** in order to deploy your project to the player PC's *Content Update Folder*. If you have configured everything correctly you will see a success message in the publication protocol.

14. If the *FrontFace Player Application* is still running on the player PC it will immediately show your recently configured playlist (instant update feature). Otherwise launch the *FrontFace Player Application* again in case you have closed it in step 3. It will then show your playlist right after start up because the content has already been deployed to the *Content Update Folder*.

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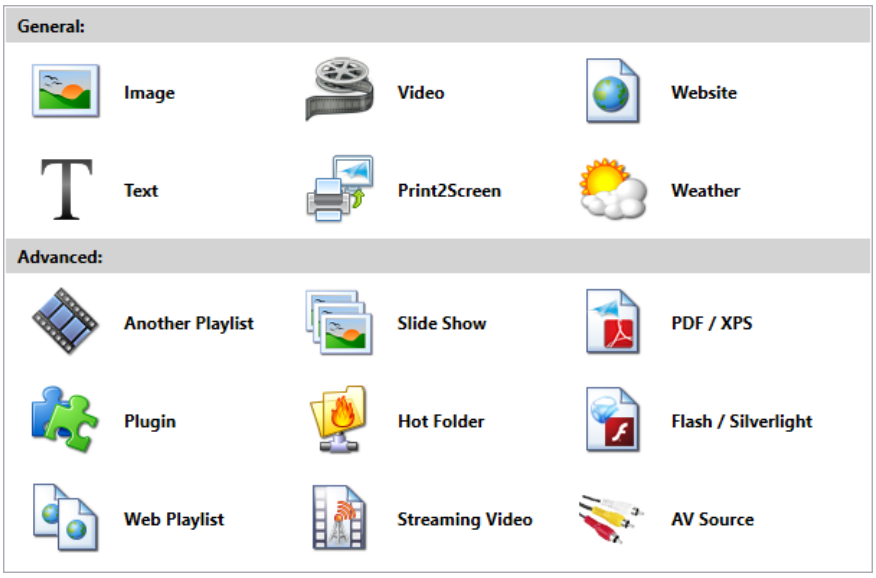
4 Supported Media Formats

FrontFace for Public Displays supports various media and file formats. This is a huge advantage because it allows you to re-use your existing content, documents and applications without any modifications.



The following media formats are supported naively:

Media Format	Description
General:	
Image	Any pictures, images or photos, in BMP, PNG or JPEG format (photos can be automatically enhanced with an optional Motion Zoom effect for more dynamic presentations!).
Video	WMV, MOV, MP4, AVI and all formats which are supported by Windows Media Player 10 or higher (please see System Requirements for details!).
Website / HTML	Any Website (HTML) can be displayed with full support of HTML5, CSS3 as well as Flash and Silverlight; both (static) offline Web pages as well as those which are accessed online via URL are supported.
Text	Free text input, incl. rich formatting such as font, color, bold, italic, etc.; see *Working with Placeholders* for advanced text features.
Print2Screen	A special E-Paper format by FrontFace, which can be generated with any Windows application using the included virtual printer driver; see *How to use Print2Screen*.
Weather	Displays the current weather conditions for any location plus a 3-day weather forecast; see *Using the Weather Widget*.
Advanced:	
Another Playlist	You can embed any other playlist within your playlist; see *Embedding Playlists in Playlists*.
Slide Show	Shows a sequence of images/photos (supports the above formats) with an optional transition effect and Motion Zoom effect.
PDF and XPS	PDF is a common e-paper format what can be generated using various tools, e.g. Adobe Acrobat. XPS is the Microsoft e-paper format, which can be freely generated by applications such as Word, PowerPoint or Excel.
Plugins	FrontFace can easily be extended with custom functionality by using plugins; see *Using Plugins* for details.

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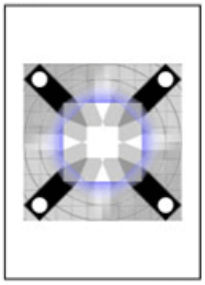
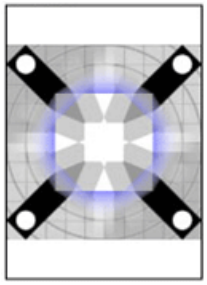
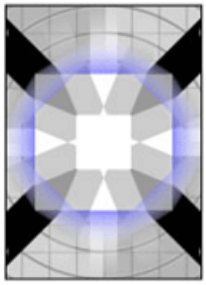
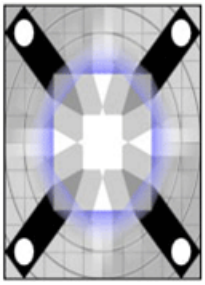
Media Format	Description
Hot Folder	A "Hot Folder" is a (shared network) folder which is scanned for displayable files at the point of time when the hot folder content is being shown. Any files in this folder (videos, pictures, XPS and HTML files) are then shown as dynamic playlist; see *Dynamic Playlists (Hot Folder)*.
Flash / Silverlight	Flash and Silverlight objects can be embedded directly; see *Using Flash and Silverlight*.
Web Playlist	It is also possible to add a (dynamic) sequence of Web pages to a playlist by providing the URL to an RSS feed; see *Using Web Playlists* for details.
Streaming Video	All Streaming sources that are supported by Windows Media Player 10 or higher can be integrated.
AV Source	Live AV signal, e.g. Web Cams or Video grabbers (for DVD or TV); see *Integration of TV Programs and AV Sources*.
Other supported formats:	
RSS	Apart from any custom text, the news ticker can also display any RSS 2.0, RSS 1.0/RDF or Atom news feed.
Audio	Background music in WAV, MP3 or WMA format can be defined for entire playlists or invidiual playlist pages. Apart from that also audio streams (e.g. Internet radio) are supported (by using *WPL playlists or ASX/WVX files*).

Automatic scaling of content:

Thanks to intelligent algorithms and modern image processing technologies, *FrontFace for Public Displays* is able to always display any type of media in a perfect way, no matter which resolution or orientation the target display has. In addition to that the software offers you ways to influence how content is scaled or aligned if they do not match with the target view port. The following stretching options are available for content types:

None	*Uniform*	*Uniform to Fill*	*Fill*
			

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Hint: For best rendering performance it is recommended to use only content that are not significantly larger or smaller than the intended display size. This reduces the necessary amount of up- and down-scaling which guarantees a fluid rendering even on computers with less performance.

When importing images or photos which are very large (e.g. those that where made using a modern digital camera), the *Display Assistant* asks you if you want to automatically scale down the pictures in order to reduce the size.

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5 System Requirements

FrontFace for Public Displays can be installed and used on all PC's that run a Microsoft Windows operating system.

Supported Windows versions:

- Windows 7 (32 and 64 Bit, also Embedded Standard*)
- Windows 8 or Windows 8.1 (32 and 64 Bit, also Embedded Standard*)
- Windows 10 (32 and 64 Bit, also Embedded*)

Runtime requirements:

- .NET Framework 4.0 / 4.5 (is installed automatically by the setup wizard if required!)
- Windows Media Player 10 or higher (only required for video content); you might also need to install the appropriate codecs to playback certain video formats. The LAVFilters codec pack is a good choice.
- In case you require a proxy server to access the Internet (either by the player application or the *Display Assistant*) this Web proxy has to be configured properly as described in the section Proxy Server Configuration!

Additional requirements for the player application:

- In case you want to use Flash or Silverlight content you have to install the appropriate browser plugins (see Using Flash and Silverlight Content).

Hardware requirements:

- There are no minimum hardware requirements for this software. In order to achieve a good performance it is recommended to use a decent graphics card (e.g. NVIDIA or ATI). Generally the required hardware highly depends on the indented use case of the software (e.g. weather multimedia features such as videos and graphical transition effects are being used or if only static content is supposed to be shown).
- The player PC should have at least 1 GB of RAM. However 2 GB of RAM is recommended for a robust setup.
- All screen resolutions and orientations (landscape/portrait) are fully supported, incl. Full HD and 4K. You can control multiple screens, also showing different content, with a single player PC.

Automated installation:

- Apart from the normal interactive, wizard-based installation it is also possible to fully automate the setup process by command line switches ("silent install"). This allows the use of specialized deployment software tools in order to automatically deploy a large number of player software installations. The full description of the command line options that are available for the setup as described in section *Software Deployment and Updates*.

Setting up the player PC for continuous operation mode:

- The player PC should be configured in a way that it does not request a password at boot time and that the *FrontFace for Public Displays Player Application* is started automatically. Furthermore, screensaver and standby mode should be disabled. You can use the separately available, free *FrontFace Lockdown Tool* in order to apply all these settings to the configuration of the player PC with only one click (please see section "Continuous Operation Mode Configuration").

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***) Important information regarding the use of EWF (Enhanced Write Filter) of Windows Embedded Standard:**
In case you are using one of the embedded versions of Windows, please make sure that the *Enhanced Write Filter (EWF)* (while installing *FrontFace*) is deactivated. You also have to relocate the content cache folder to a location which is not protected by the EWF (please see option "StorageFolder" in section Advanced Configuration Features). After applying this modification *FrontFace* is fully compatible with EWF.

Using the Display Assistant as "Portable App":
Install the software with the *"Full Installation"* option on a normal PC first. Then copy the installation folder (by default **`"c:\Program Files\mirabyte\FrontFace for Public Displays\"`**) onto an USB thumb drive. Use the application **`"Display Assistant Start.exe"`** to start the *Display Assistant* from the USB thumb drive. Please note that the *Print2Screen* feature in not available in this case because the required driver is not installed on the target PC. However, you can use applications such as Word, PowerPoint or Excel to directly create XPS documents. In case you have installed the *"XPS Document Writer"* printer by Microsoft, you can create XPS documents with any Windows application and then import these XPS files into *FrontFace* using the *Display Assistant*.

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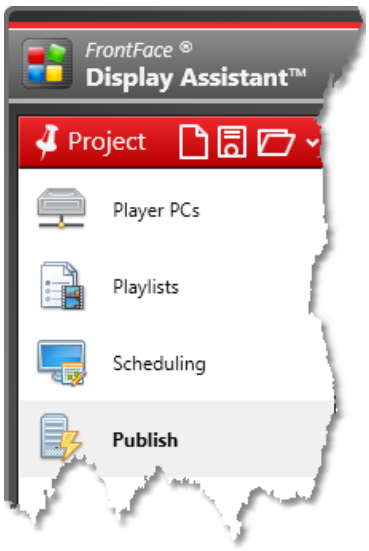
6 Working with the Application

The *Display Assistant* is used to control and manage both the display content as well as the player PC(s). This section explains the basic concepts and the workflow for creating and managing content and screens.

Alle settings and content is stored as so called projects (**".ffpdx"** file extension). A project contains playlists, media files and configuration information. You can also create multiple projects but in most cases you will only need one single project to work with. The project folder should be stored in a secure location. It is also recommended to create a backup of this folder from time to time to make sure that your work cannot accidentally get lost.

The **main menu** of the *Display Assistant* has four menu items that provide access to all the relevant features:



Player PCs:
On this page you configure your player PC(s) which are the computers that actually control your display(s).

Playlists:
Content is organized in so called playlists. A playlist defines a sequence of pages that contain a single or multiple content elements such as images, videos, Web pages, texts, etc. You can also preview your playlists in this menu.

Scheduling:
In order to assign playlists to the screen(s) of your player PC(s), you have to define when and which playlist is supposed to be displayed. Because a player PC can control multiple screens the playlists are assigned to the screens of the player PCs using schedules.

Publish:
After you have configured your player PCs, playlists and schedules, the content has to be transferred to the player PCs. This can be done using the **"Publish"** page of the *Display Assistant*.

Hint: This manual also comes with a a simple step-by-step setup tutorial that explains you how to set up and to use the software.

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6.1 Player PC Configuration

You can control a single or multiple player PCs with a single project. Please create an entry for every player PC that you want to address in the *Display Assistant*.

Apart from a name for each player PC you also have to assign the so called *"Content Update Folder"* (please see section "Publishing to Player PCs" for details). Usually these settings do not have the be modified after you made the initial setup. Modifications are only needed if you add new screens to your system/display network.

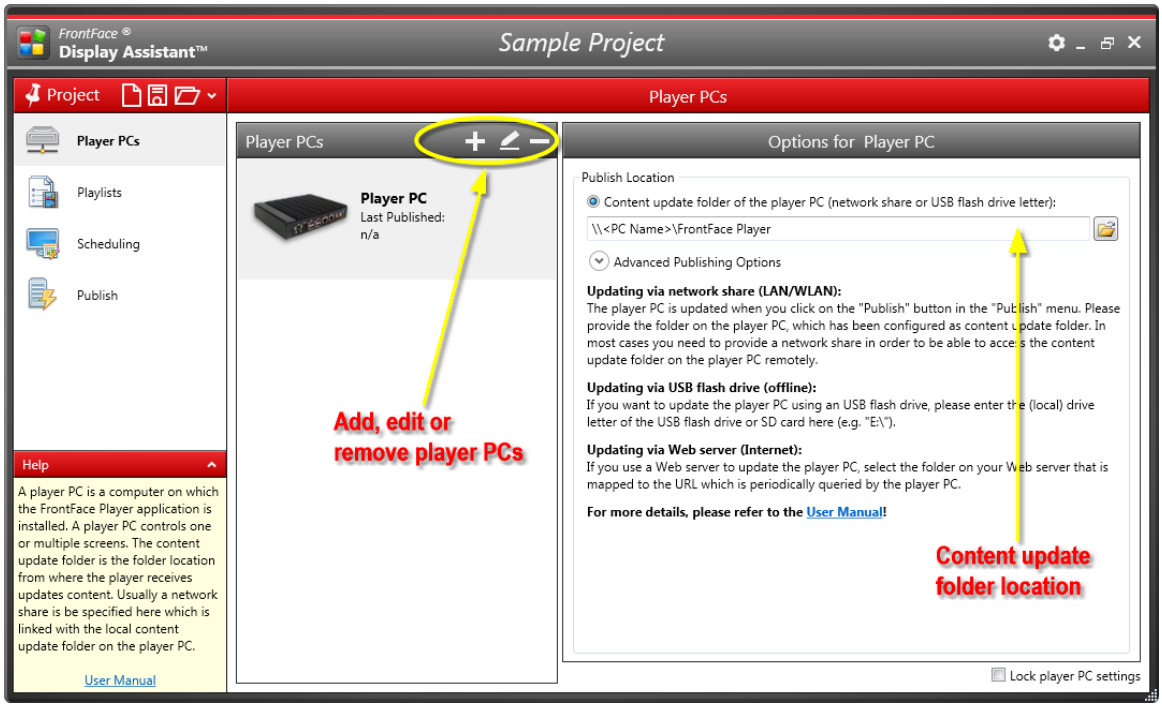
FrontFace ®
Display Assistant™
Sample Project
Project
Player PCs
Playlists
Scheduling
Publish
Help
A player PC is a computer on which the FrontFace Player application is installed. A player PC controls one or multiple screens. The content update folder is the folder location from where the player receives updates content. Usually a network share is be specified here which is linked with the local content update folder on the player PC.
User Manual
Player PCs
Player PC
Last Published:
n/a
Add, edit or remove player PCs
Options for Player PC
Publish Location
Content update folder of the player PC (network share or USB flash drive letter):
\\<PC Name>\FrontFace Player
Advanced Publishing Options
Updating via network share (LAN/WLAN):
The player PC is updated when you click on the "Publish" button in the "Publish" menu. Please provide the folder on the player PC, which has been configured as content update folder. In most cases you need to provide a network share in order to be able to access the content update folder on the player PC remotely.
Updating via USB flash drive (offline):
If you want to update the player PC using an USB flash drive, please enter the (local) drive letter of the USB flash drive or SD card here (e.g. "E:\").
Updating via Web server (Internet):
If you use a Web server to update the player PC, select the folder on your Web server that is mapped to the URL which is periodically queried by the player PC.
For more details, please refer to the User Manual!
Content update folder location
Lock player PC settings

Fig.: Managing player PCs in the Display Assistant

"Single Player PC" or "Player PC Group":

When adding a new player PC you can chose if you want to create a *"Single Player PC"* or a *"Player PC Group"*. A player PC group is helpful in case you have multiple player PCs that are all supposed to show the same content. Instead of setting up each player separately and assigning a playlist or a schedule to each player PC you can create a player PC group. In this group you enter the *Content Update Folders* for every player PC of this group. In the *"Scheduling"* section of the *Display Assistant* you can then address the player PC group as if it were a single "logical" player PC by directly assigning a playlist or a schedule. This will save you a lot of manual work when you want to make any changes or updates to the content or the schedules that shall affect all player PCs of that player PC group.

Hint: You can use the option **"Lock player PC settings"** to disable all options on this page. This can be useful to prevent inexperienced users from accidentally corrupting the current player PC configuration.

Notice: For accessing the network share (content update folder) the *Display Assistant* uses the credentials of the currently logged-on Windows users. In case you want to explicitly use different credentials, you may define a domain, user name and password in the **"Advanced Publishing Options"**.

For information on how to configure and setup the actual player PC hardware and the Windows operating system (e.g. Windows auto login, configuration of permanent operation mode, auto start

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of *FrontFace*, etc.), please see the section "Continuous Operation Mode Configuration". In many cases it is also useful to setup the player PC for remote administration.

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6.2 Creation and Management of Playlists

The actual content that is shown on the screens is organized with so called "playlists".

All playlists are managed separately and are not tied to a specific player PC. The advantage of this approach is that if you want to show the same playlist on multiple displays you only have to create a single playlist and can then reuse it on multiple displays. The actual content is not created with *FrontFace for Public Displays* but with external applications such as imaging programs, video software or applications like PowerPoint, Word, etc. - This allows you to reuse your existing content and saves you from having to learn how to use a new, complex application just because you want to create content for your screens. The Print2Screen feature of *FrontFace for Public Displays* allows you to create high quality content with ANY Windows application!

You can add new pages to a playlist, remove existing ones or change the ordering. Besides the possibility to manually add new pages and assign content to them you can also directly import content (files like images, videos, etc.). Optionally you can also **drag & drop** files from the *Windows Explorer* into a playlist. For every file that you add directly, a new page that uses the "full screen" page layout is created. It is also possible to drag & drop single files into empty containers of a page (marked by a green "+" icon) from the *Windows Explorer*.

In order to preview a playlist on your computer, simply click on the corresponding **"Preview"** button in the list of available playlists. A preview of a single playlist page is also possible. Therefore, every page in the list of pages in the *Display Assistant* has a separate preview button you can click!

Whenever you call the preview of a page or a playlist, you can also specify the resolution of the screen that is going to be simulated. This allows you to test your playlists at different screen resolutions and orientations. Besides typical screen resolutions (e.g. full HD landscape), you can also specify your own, custom screen resolutions which are defined by height and with (pixels) of the screen when you select **"Custom"** from the drop down menu. It is also possible to save your custom screen resolutions within your project for quick access.

Hint: It is also possible to change the playlist order for a better overview. Please click on a playlist item in the list with the right mouse button and choose from one of the available moving operations. Please note that the order of the playlists does not have any functional effect; this feature is solely for maintaining a better overview in the *Display Assistant* when working with a lot of playlists.

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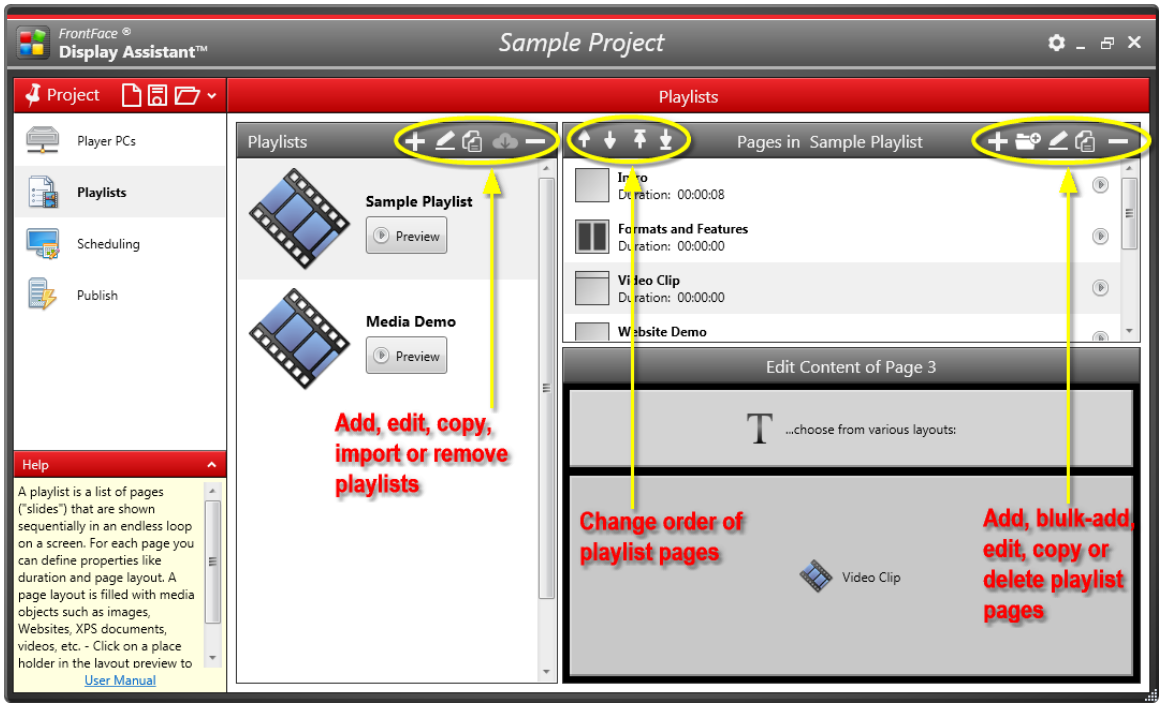
FrontFace ®
Display Assistant™
Sample Project
Project
Playlists
Player PCs
Playlists
Scheduling
Publish
Help
A playlist is a list of pages ("slides") that are shown sequentially in an endless loop on a screen. For each page you can define properties like duration and page layout. A page layout is filled with media objects such as images, Websites, XPS documents, videos, etc. - Click on a place holder in the layout preview to
User Manual
Playlists
Sample Playlist
Preview
Media Demo
Preview
Add, edit, copy, import or remove playlists
Pages in Sample Playlist
Formats and Features
Duration: 00:00:00
Video Clip
Duration: 00:00:00
Edit Content of Page 3
...choose from various layouts:
Change order of playlist pages
Video Clip
Add, bulk-add, edit, copy or delete playlist pages

Fig.: Creating and editing playlists using the Display Assistant

It is also possible to import playlists from other projects into the currently opened project. This allows you to easily reuse existing playlists that have been created in the context of another project into a new project. The import also covers all content files (like images, videos, etc.) that are referenced by the imported playlist.

6.2.1 Determination of the Duration of a Playlist Page

The display duration of a playlist page in the *FrontFace Player Application* is determined by multiple factors. First of all, it is possible to define an explicit duration for every page in the page settings dialog. In case no duration has been defined (00:00:00 = "auto"), the default display duration from the playlist settings are used instead (which is by default 10 seconds (00:00:10)). A special case is embedding content into a playlist page which has it's own "natural" duration (e.g. video clips or embedded playlists). In this case the shortest duration of any content on that page determines the duration of the whole page unless an explicit duration has been defined for that page.

The actual duration of a playlist page is determined by the following aspects in this order:

1. Is an explicit duration defined for the page? If yes, the page will always be shown for this time span.
2. Else, if the duration of the page is set to 00:00:00 (= "auto") the default page duration which is defined in the playlist will be applied.
3. Unless the page does contain content which has a "natural" duration (e.g. video clips, embedded playlists, slide shows, etc.) the page will be shown until that content has been fully shown. In case more than one content element with a natural duration is used on a page the page will be shown until the "shortest" content element with a natural duration has been fully shown.

Notice: It is possible that a page is shown a bit longer than the defined duration in case the next page of the playlist contains content (e.g. huge videos) that take some time to load. Instead of showing a blank screen the previous page remains visible until the new page is ready to play.

Examples:

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- *A video (duration 2 min.) is embedded in a page where no explicit duration for this page has been defined (00:00:00); in this case the whole page is shown for 2 min. (unless any special loop options have been set for the video!).*
- *A video (duration 2 min.) is embedded in a page with an explicit duration of 00:00:15 for this page; in this case the whole page is shown for 15 sec. which means that the full length of the video is not shown.*

Notice: In case your playlist contains only one single page, please make sure that you have also read the special information about *Playlists with a Single Page*.

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6.2.2 Screen Design and Layout

The way how content (images, videos, Web pages) is displayed can be influenced in two different ways:

Screen Layout (is defined per playlist):

On the one hand you can select a **screen layout** for every playlist. This template remains the same for the whole time the playlist is shown and defines static elements such as a news ticker or an station logo (as seen on TV channels). For more details on how to customize existing screen layouts, please see the section "Customization and Styling".

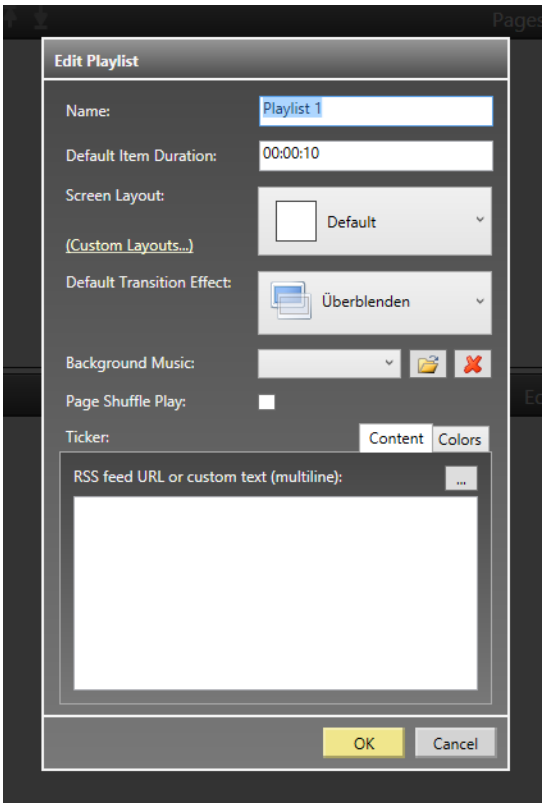

Fig.: The properties dialog of a playlist allows setting the screen layout

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Page Layout (is defined per page):

On the other hand you have to assign a **page layout** to every page of a playlist. A page layout basically defines how the screen is partitioned which allows you to display more than one content on a single page. The basic page layout contains just one container for single content which is then displayed in full-screen mode. You can choose from the set of predefined page layouts that come with the software. Specifically the "Overlay Layouts" (see *Overlay Layouts (Layers)*) offer interesting design options. Additionally, you can also define your own, custom layouts (see section "Customization and Styling"). A page layout always consists of at least one or multiple **containers** that can then be "filled" with content.

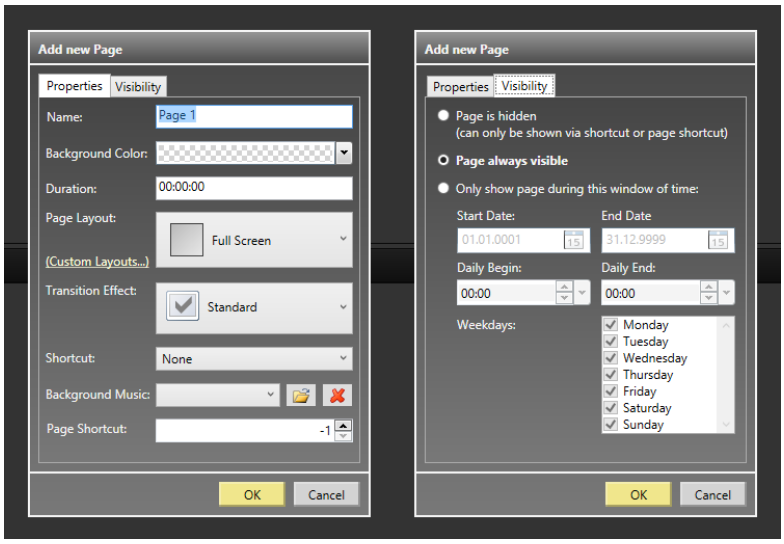
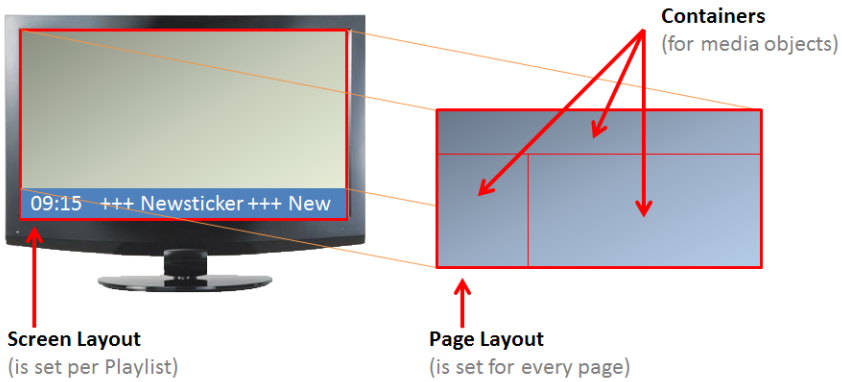


Fig.: The properties dialog of a playlist page allows setting the page layout as well as visibility settings.

Furthermore it is also possible to **embed another playlist** in a **container** of a page layout. This can be used to make certain parts of a page static while others contain dynamic content (see Embedding Playlists in Playlists).



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6.3 Controlling Screens and Schedules

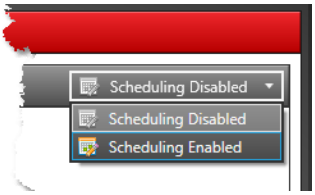
FrontFace for Public Displays has different modes to assign playlist(s) to screen(s):

- **Scheduling disabled:**
  - **Direct assignment of a playlist to a screen**

- **Scheduling enabled:**
  - **Time-based assignment of a playlist to a screen**
  - **Event-based assignment of a playlist to a screen**

In case of a direct assignment (when scheduling is disabled) you simply define which playlist is supposed to be shown on which screen. This will cause the playlist to be shown permanently on the assigned screen (as infinite loop).

In contrast to that, if you set the option **"Scheduling Enabled"** you have more advanced options. This mode allows you to assign playlists to screens depending on a time-based schedule or triggered by events.



You can turn the scheduling feature on and off on the *Display Assistant* in the **"Scheduling"** item of the main menu. Depending on the selected mode, you can either assign a playlist directly to a screen or you can use the advanced scheduling options that are described in the following sections.

Notice: You cannot use a playlist, that is used with the the time-based scheduling for the event-based scheduling at the same time and vice versa. This also applies for playlists that are embedded into other playlists that are either used by the time- or event-based scheduling.

6.3.1 Time-based Scheduling

The time-based scheduling uses so called *"Timers"*. A timer defines a point of time (e.g. *"today, 4pm"*) or a sequence in time (e.g. *"every day at 5pm"*) which is then assigned to a playlist. It is possible to define multiple timers for a single screen. Which playlist is shown depends on the schedule which is the most current one compared to the current date/time. If a timer becomes "active" because the matching point of time has been reached, the player PC will automatically start the playlist which is assigned to this specific timer.

Notice: Please make sure that the system clock of your player PC is set correctly which is required for this feature in order to work correctly!

Once a playlist has been fully shown, it is repeated automatically (infinite loop) until another timer breaks the current playlist and starts another playlist.

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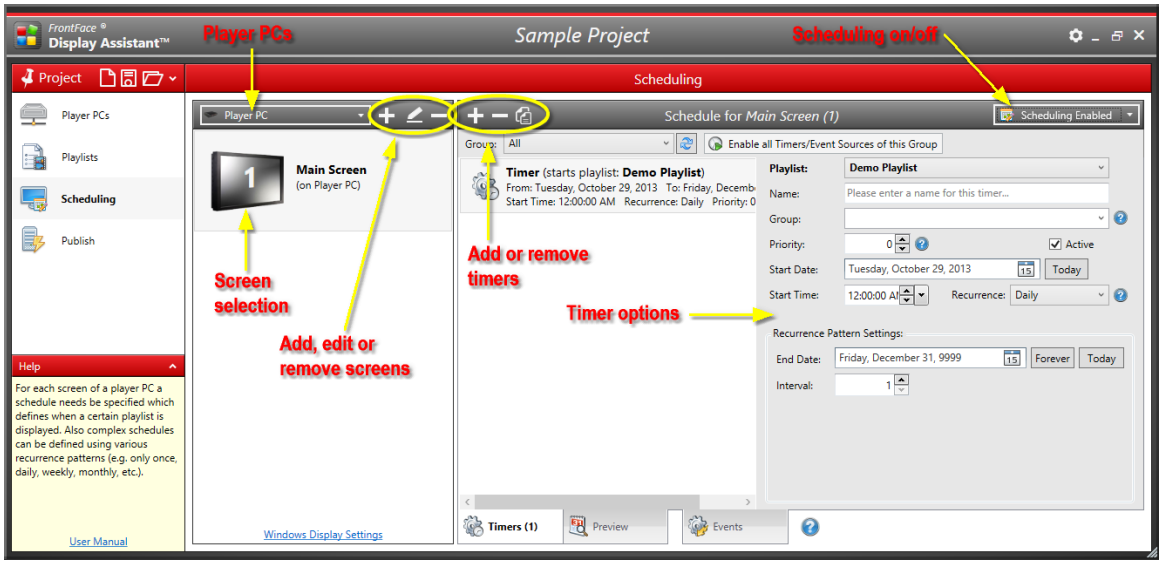

Fig.: Overview of the defined timers of a screen

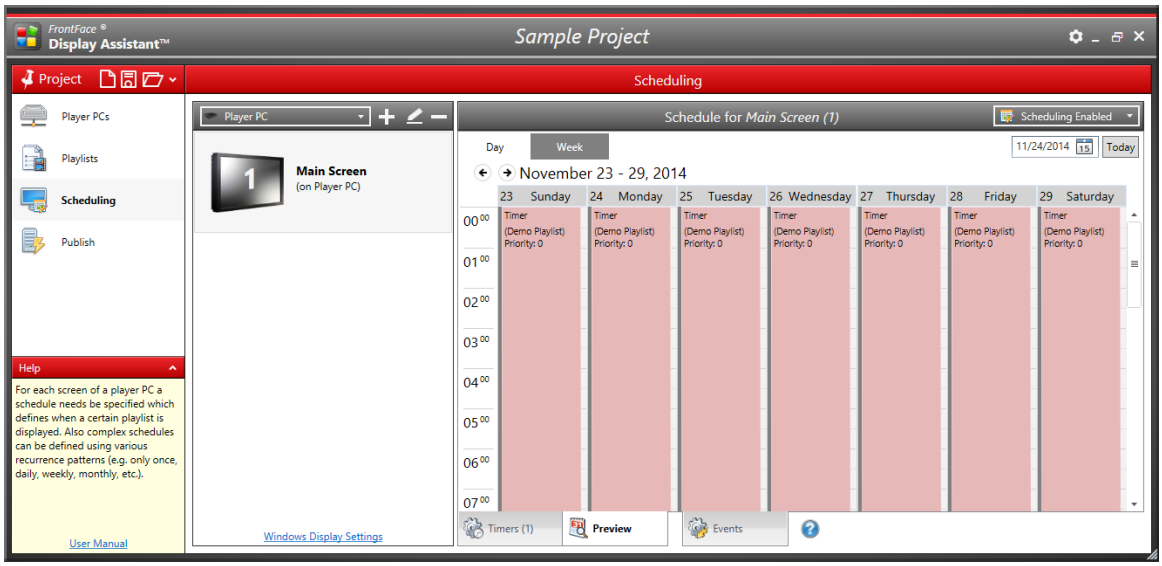

Fig.: Preview of the defined timers of a screen

In addition to the list view of defined timers, a calendar-like preview is also available which allows you to easily find out which playlist will be shown at a specific point of time.

Furthermore it is possible to assign timers (and event sources) to *groups*. This helps getting a better overview in case you have defined a lot of timers/event sources which belong together semantically. But the grouping feature also allows you to enable all timers/event sources of the currently selected group with one click while all other schedules are being disabled. This is a very helpful feature to implement so called "scenarios" which can then be activated very easily.

Example: In order to show a playlist on a daily basis from 08:00 to 23:59, create a new timer of the **`"Daily"`** type which starts at 08:00. This makes the player start this playlist every day at 08:00. Before that point of time (00:00 until 07:59) the software will show a black screen, because no schedule is defined. If the *FrontFace Player Application* is started at a later point of time (e.g. at 15:00), this 8 o'clock timer is still the most recent one which causes that the associated playlist is started instantly.

Hint: The timers in *FrontFace* allow you to define when a playlist is being startet but not when it

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is being terminated/stopped. You can however define another timer that starts a different playlist which will then stop the current playlist.

In order to really "stop" a playlist, which means to switch the screen to blank, simply create a new, empty playlist and assign it to a new timer that starts at the desired point of time.

Notice: It is possible to define timers that cause a conflict (e.g. you could define a timer that starts a playlist A at the same time as another timer starts playlist B). By setting the value of the **"priority"** property of a timer you can define which timer will "win" in case of a conflict with another timer. The priority is simply a numeric value. The higher the number, the higher the priority. This also allows you e.g. to define a default timer (e.g. for the entire week) as well as an additional timer with special handling for a holiday or a special occasion without having to delete or edit the previously defined default timer.

6.3.2 Event-based Scheduling

Apart from using timers you can also use events to trigger a playlist. In order to use events, you have to define an *"Event Source"* which generates or receives (from an external system) the events. In the tab **"Events"** you can add a new event source. For every event source you have to define which playlist is going to be triggered (displayed) when an event fires. The duration of a playlist that is started by an event is controlled by the event itself.

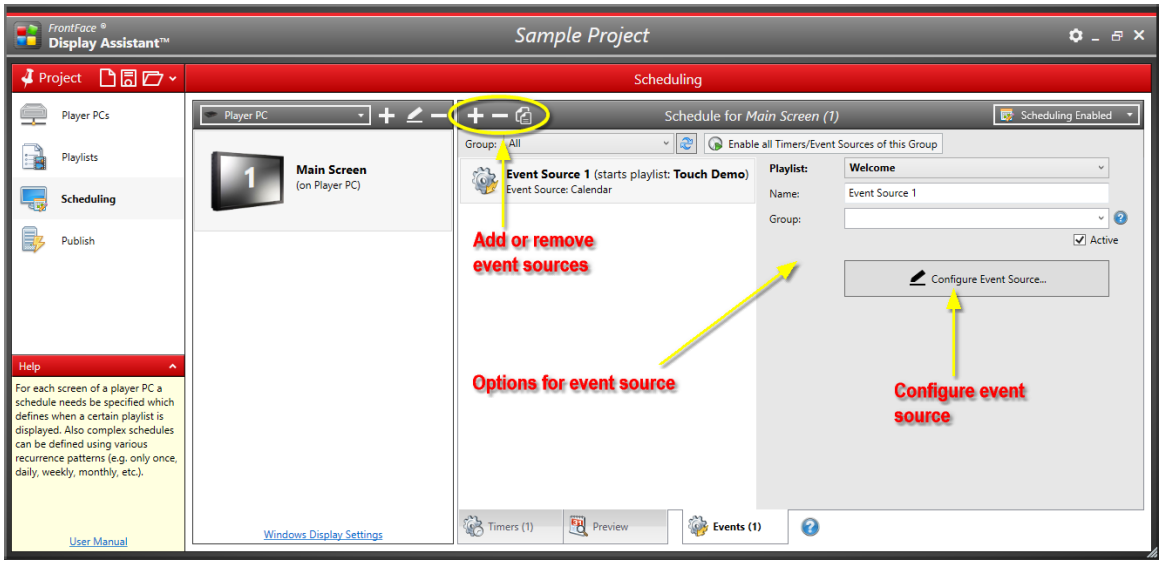

Fig.: Overview of the defined event source of a screen

Event sources are implemented as so called *"Event Source Plugins"*. The *FrontFace* software comes by default with the *"Calendar"* event source plugin which provides a calendar. This calendar holds appointments which fire an event as soon as an appointment becomes due. You can use this to implement a welcome board system that welcomes visitors on a screen with a personalized welcome message.

Event source plugins are used to establish a link with external systems or sensors in order to control what is currently shown on the screen. For more information about event source plugins, please see the section "Using Plugins".

Notice: A playlist which is triggered by an event only appears on the screen if the event actually fires. This behaviors is different to timers which also control playlists retroactively. E.g. if you perform an update of the player (publish) at 3:00pm and have defined a timer to start a playlist A at 2:00pm the playlist will instantly be shown after the publishing has been finished. If you have, in contrast to that, defined an event source that generates an event at 2:55pm to start a playlist B

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for 15 minutes, the playlist will not be shown after publishing, because the point of time where the event is raised has already passed. Instead, playlist A remains running.

6.3.3 Scheduling of Individual Playlist Pages

It is also possible to define date/time-controlled visibility settings explicitly for a single page within a playlist. These settings are available on the *"Visibility"* tab of the playlist's settings dialog. Here you can define whether the page is supposed to be always visible (default) or always hidden (in this case the page is only accessible through a shortcut!) or if you want to define a time window during which the page will be shown.

This allows you to define a playlist which contains pages which are only shown in specific windows of time or during certain days of the week.

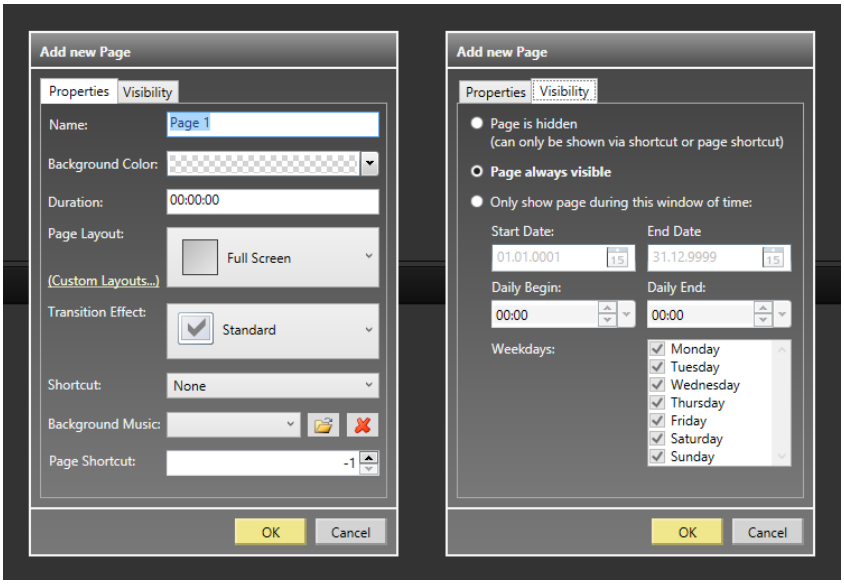

Fig.: Page properties dialog of a playlist showing the visibility settings for a page.

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6.4 Publishing to Player PC(s)

Here you can execute the publishing process which deploys the content onto to player PC(s) (**"Publish"**). The *Display Assistant* automatically compiles the required files and informs you about the progress and the result of the publishing process.

Once you click on the **"Publish"** button, all player PCs that are configured in the current project will be updated. In case you only want to update a specific player PC, simply click on the arrow icon on the right part of the **"Publish"** button. A drop-down menu will appear that allows you to choose which player PC you want to update.

In the Player PCs section, you can also select for every individual player PC if you want to be skipped during the publishing process. In this case, the palyer PC will only be updated when you select it explicitly from the drop-down menu of the **"Publish"** button. If you directly click on the **"Publish"** button, the specific player PC will not be included in the publishing process.

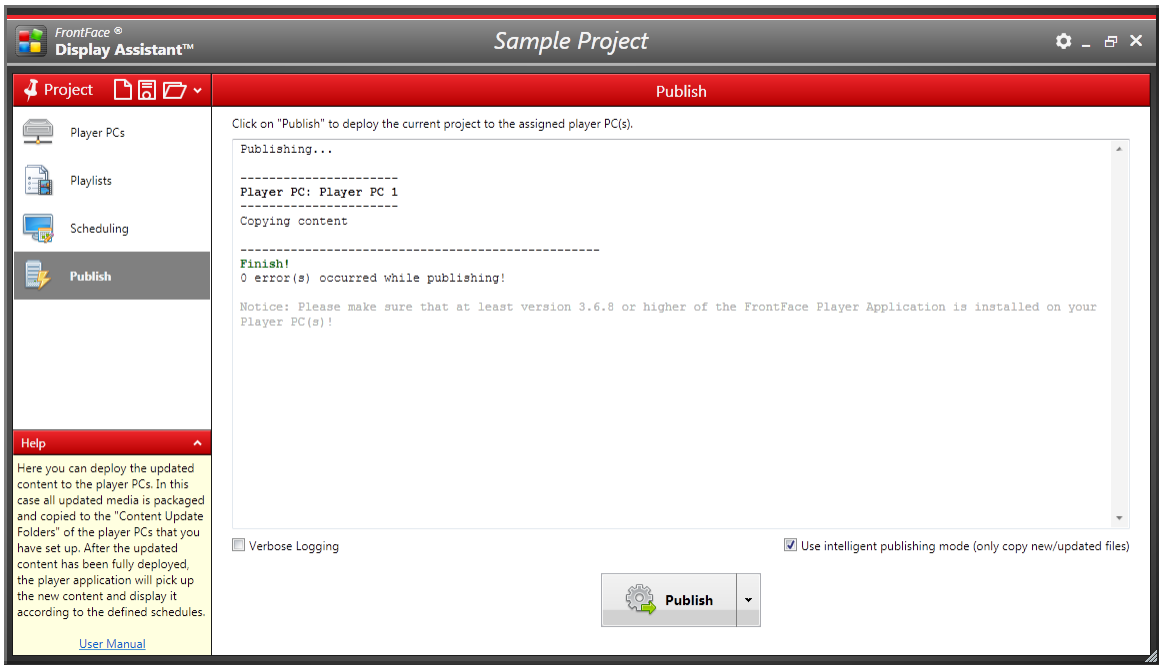
FrontFace ®
Display Assistant™
Sample Project
Project
Player PCs
Playlists
Scheduling
Publish
Help
Here you can deploy the updated content to the player PCs. In this case all updated media is packaged and copied to the "Content Update Folders" of the player PCs that you have set up. After the updated content has been fully deployed, the player application will pick up the new content and display it according to the defined schedules.
User Manual
Publish
Click on "Publish" to deploy the current project to the assigned player PC(s).
Publishing...
Player PC: Player PC 1
Copying content
Finish!
0 error(s) occurred while publishing!
Notice: Please make sure that at least version 3.6.8 or higher of the FrontFace Player Application is installed on your Player PC(s)!
Verbose Logging
Use intelligent publishing mode (only copy new/updated files)
Publish

Fig.: Publishing content with the Display Assistant

Notice: By default the *"intelligent publishing mode"* is used by the *Display Assistant*. This means that only those files are copied into the content update folder, which are new or which have changed since the last time the publication process was run. This prevents that files have to be copied unnecessarily (e.g. large video files) if only small changes have been made to the project. When you deactivate the **"Use intelligent publishing mode"** option, all files will be freshly copied into the content update folder.

In order to get detailed information about what is happening in the background during the publishing process, you can enable the option **"Verbose Logging"** to get a verbose log output.

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FrontFace for Public Displays supports three main deployment methods. During the so called publishing process, the content (media files, playlists, schedules, etc.) is deployed onto the player PC(s).

Choose the best method for you based on your infrastructure and your individual requirements. The following deployment methods are available:

- **LAN-based Deployment** (via a network share)
- **Internet-based Deployment** (via a Cloud storage service, such as OneDrive or Dropbox)
- **Offline Deployment** (via USB / removable media)

The "interface" between the player PC and the *Display Assistant* is the so called *Content Update Folder*. Usually this is a local folder on the player PC which is accessible from other, remote computers as a network share (in case of the LAN-based deployment), so that the *Display Assistant* is able update the player PC remotely. The player application permanently monitors the *Content Update Folder* and updates itself automatically in case new content and/or schedules have been fully transferred into this folder by the *Display Assistant*. The *Content Update Folder* may also be a folder which is synchronized by a Cloud storage service (for Internet-based deployment) or the drive letter of an USB flash drive or an SD memory card (for offline deployment).

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6.4.1 LAN-based Deployment

In this scenario each player PC is connected to a local area network (LAN). A network share is created on every player PC that provides access to the so called *"content update folder"* a local folder on the player PC, which has to be specified when the *FrontFace Player Application* is launched for the first time*. The *Display Assistant*, which is installed on a separate computer, then copies the updated content during the deployment process to the player PC into the Content Update Folder (which must be accessible as a network share). The *FrontFace Player Application* will then automatically pick up the updated content once the deployment process has succeeded.

*) In case you have already defined a different content update folder, please launch **"FrontFace Player Setup"** from the Windows start menu to be able to redefine the Content Update Folder.

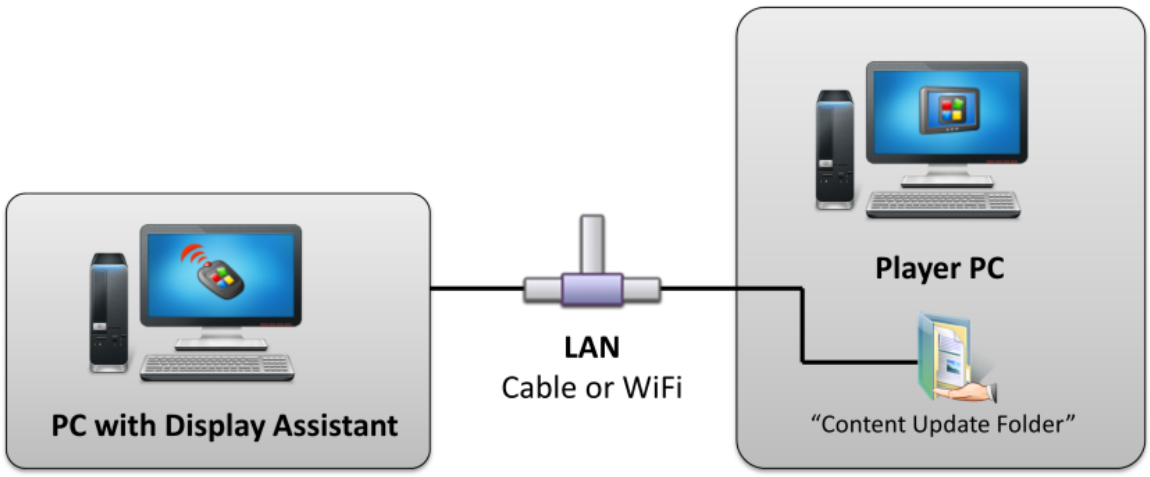
If you prefer to manage the displays from more than one computer, install the *Display Assistant* on further computers and store the project file on a central network share instead of a local folder. This will allow accessing the project file from any computer in the network.

Notice: When installing the player software, you can select an option to automatically create a network share for the Content Update Folder. The name of this share is by default:

\\<PCNAME>\FrontFace Player

This share corresponds to the local folder:

C:\ProgramData\mirabyte\FrontFace for Public Displays\FrontFace Player



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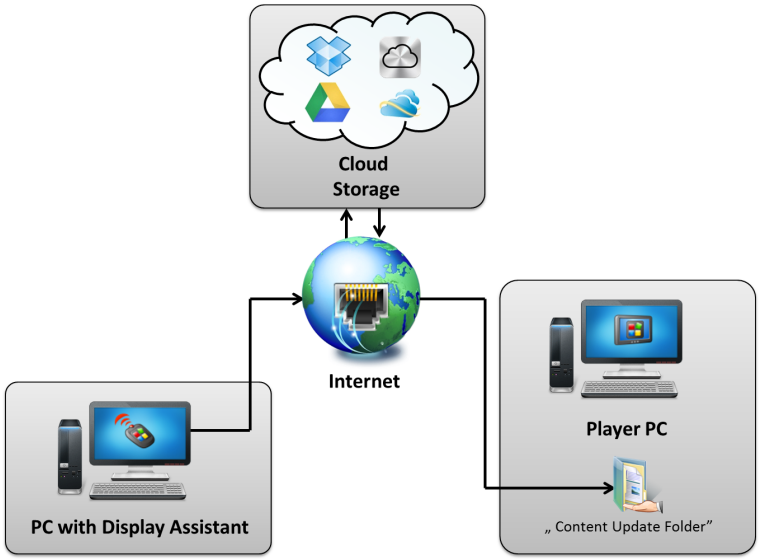
6.4.2 Internet-based Deployment

In case the computer with the *Display Assistant* and the player PC(s) are not in the same network but do have access to the Internet it is possible to use a cloud storage service such as OneDrive or Dropbox for the deployment of the content. All cloud storage services offer free packages with a capacity ranging from 5 to 15 GB which is totally sufficient for most scenarios.

Notice: In case you have the possibility to establish a VPN (virtual private network) connection between your network and the player PC, there is no need to use a cloud storage service. In this case the deployment works exactly in the same as in the LAN-based deployment in a local network.

The *Display Assistant* does not directly publish the content onto the local hard drive of the player PC(s) but into a local folder which is synchronized by the cloud storage service. On the player PC(s) a local folder is selected as *Content Update Folder* which also synchronizes with cloud storage service. The basic concept of this setup is that the *Content Update Folder* is replicated over the Internet from the PC with the *Display Assistant* to the player PC(s). The actual replication is handled by the desktop software of the cloud storage service, e.g.OneDrive or Dropbox.



The *FrontFace Player Application* automatically checks if the content has been completely synchronized by the cloud storage service and starts the automatic update process.

The following steps are required for an Internet-based content deployment:

1. Sign up with a cloud storage service of your choice.
2. Install the necessary desktop software of the cloud storage service on your computer with the *Display Assistant* and on the player PC(s).
3. Create a folder which is used for the replication which is then available both on the PC with the *Display Assistant* and on the player PC(s).
4. Select this folder as *Content Update Folder* in the *Display Assistant*.
5. Select the folder on the player PC(s) as *Content Update Folder* as well.
6. Publish the content. As soon as all files have been replicated to the player PC(s) the player application is updated and shows the new content.

Warning: In case you are using *OneDrive* in combination with *Windows 8.1* or *Windows 10*, please note that oneDrive is already included with Windows and does not have to be installed separately. But when the *FrontFace Player Application* shuts down the Windows shell (**`"explorer.exe"`**), OneDrive will not replicate your files any more! Therefore you either have

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to disable the advanced configuration option of *FrontFace* which shuts down the Windows shell or simply use another cloud storage service such as Dropbox on Windows 8.1 systems. This restriction only applies for the player PC!

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6.4.3 Offline Deployment (USB flash drive)

In a case where no network connection between the player PC(s) and the computer on which the *Display Assistant* is installed on is available an offline medium like an USB bar, a SD card or any other removable media can be used to update the player PC.

Please create a folder **"\PD_DATA\"** on the USB thumb drive and select this folder as C*ontent Update Folder* in the *Display Assistant*.

After the display content has been copied onto the removable media by the *Display Assistant* the removable media may be plugged into the player PC which will then update itself automatically. No further action is required and this procedure can also be performed while the player is running.

Notice: Please note that on the very first start of the player application the removable media has to be plugged into the player PC first and the drive letter plus the **"PD_DATA"** path (e.g. **"E:\PD_DATA"**) has to be selected as *Content Update Folder* in the player application. In case you have already defined a different *Content Update Folder*, please launch **"FrontFace Player Setup"** from the Windows start menu to be able to set the *Content Update Folder* the the **"PD_DATA"** folder in the USB thumb drive.

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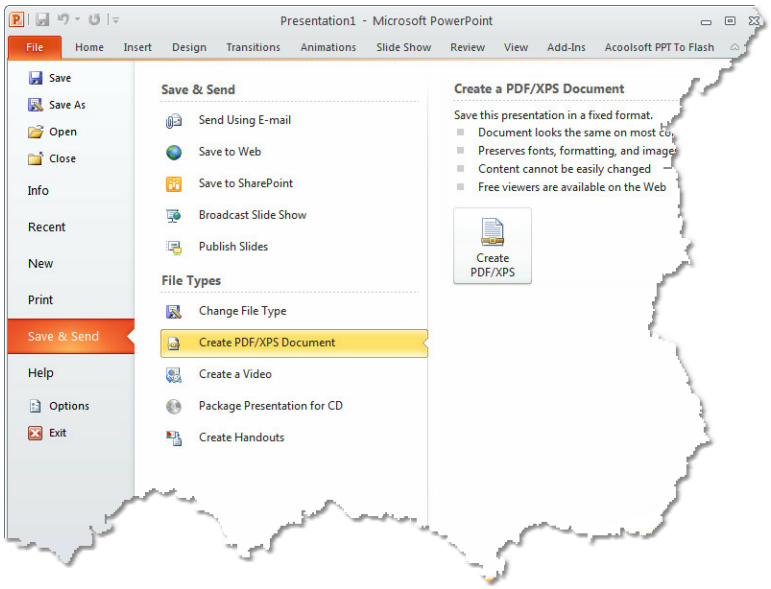
7 Tips on Content Creation

A major advantage of ***FrontFace for Public Displays*** is the fact that you can use virtually any Windows application for creating your screen content. You will not have to familiarize with a new application - instead, you can keep on using your favorite applications. E.g. you can use Microsoft Word or PowerPoint but also applications like a Open Office or any other application of your choice. In this section you will find some valuable tips & tricks on creating screen content easily and professionally:

Content creation with PowerPoint:

PowerPoint is a very good choice for creating display content. You can integrate your PowerPoint presentations in two different ways into your *FrontFace for Public Displays* playlists. You can either export your slide show to the **XPS file format** or you can export it as a **video**. While XPS files are much smaller in size than video files, they do not include any animation or transition effects. In contrast to that videos cover all animation and transition effects as defined in your original PowerPoint show.



In *PowerPoint 2009* or *PowerPoint 2010* simply click on **"File > Save & Send"** and select **"Create PDF/XPS Document"** in order to save your presentation in XPS file format or click on **"Create a Video"** to export the entire presentation as WMV video (use the **"Computer & HD-Displays"** preset for best results). Rendering a video may take some minutes depending on the complexity of your presentation and the overall processing speed of your computer.

Both XPS files and WMV video files can then be directly integrated in *FrontFace for Public Displays* playlists.

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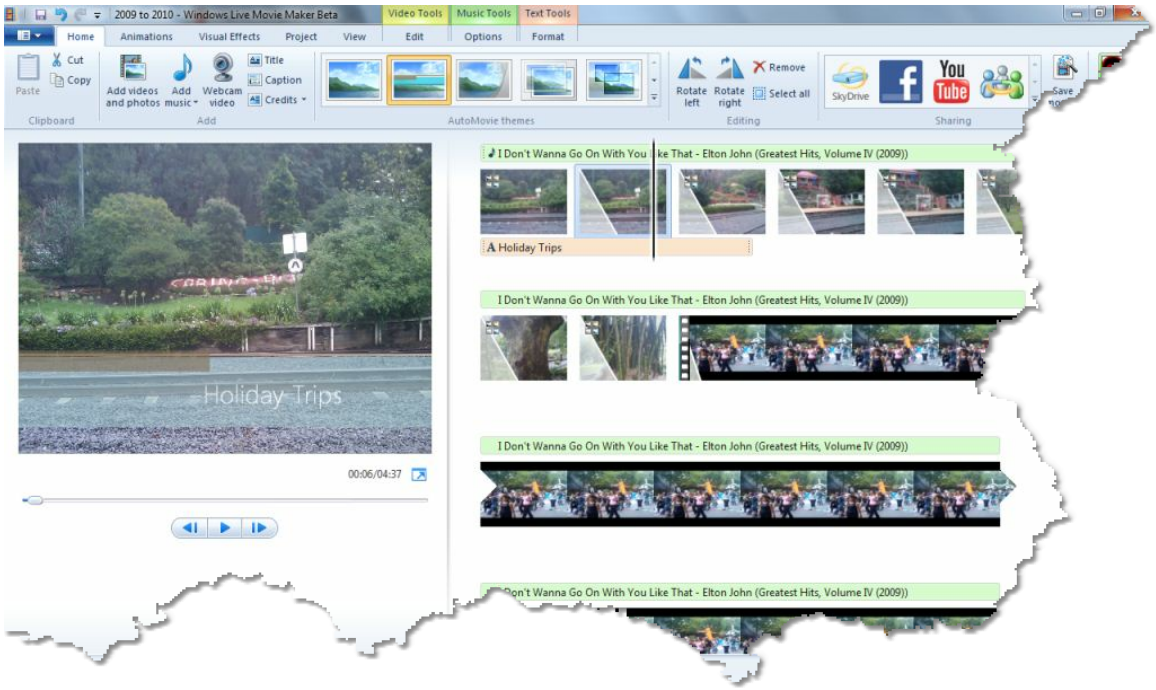
Easily create stunning slide shows:

By using the *"Slide Show"* content type it is very easy to create professional-looking sideshows from images or photos. The optional **Motion Zoom effect** allows you to create highly dynamic slide shows and presentations based on static photos. Simply add an new *"Slide Show"* media object and select some photos. Make sure that you tick the "Use Motion Zoom Effect" check box to apply the motion zoom effect to the newly created slide show.

Great-looking slide shows with Windows MovieMaker:

In order to create even more impressive slide shows with dynamic transition effects, you can use an application like *Windows Movie Maker* by Microsoft. If you have not installed Movie Maker yet, you can download it for free from the Microsoft homepage as part of the "Windows Live" software package (http://go.microsoft.com/fwlink/?LinkID=255475).



After you have started Movie Maker, click on **"Add videos and photos"** and select the pictures that you want to include in your slide show. Now choose **"Pan & Zoom"** from the **"AutoMovie themes"** gallery in order to automatically apply visually stunning transition effects.

Finally, create a video file in WMV format by clicking on **"Save movie > For HD displays"** which can then be integrated into your playlist in *FrontFace for Public Displays*.

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Content creation with Microsoft Word:

Microsoft Word is also a suitable application for easily creating display content. However you should make sure that you set the page format and page orientation to reasonable values (e.g. landscape orientation). When using either Word 2009 or Word 2010 you can save a page by clicking on **"File > Save & Send > Create PDF/XPS document"** as XPS document. This file can then be integrated into your playlist. Alternatively, you can also use the *Print2Screen* printer driver to create an output that can be used by *FrontFace* (please see How to use Print2Screen for more details). *Print2Screen* can also be used with any other Windows application that is capable of printing.

Hint: For the use with the Print2Screen printer a special paper size form is available ("Display 16:9") which is optimized for the use on 16:9 screens. However, it is possible to create custom "virtual" paper formats (e.g. 4:3 or other aspect ratios!).

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8 How to use Print2Screen

Print2Screen is a unique feature of *FrontFace for Public Displays* that allows you to create high-quality HD display content with any Windows application that is able to print.

In order to use *Print2Scree*n, you have to install *FrontFace for Public Displays* (*Display Assistant*) on a PC with *Windows Vista* or *Windows 7/8*. For the player PC(s), *Windows XP* is sufficient.

Hint: Alternatively you can also use PDF documents with *FrontFace for Public Displays* directly. In case you have a PDF document that you want to use in one of your playlists, you do not have to use Print2Screen. But you should keep in mind that the display performance of Print2Screen documents is generally much better than of PDF documents (especially if your PDF documents have been originally created for professional print reproduction). So in case you should experience a poor system performance when the *FrontFace* player application is showing PDF documents, you can use *Acrobat Reader* and Print2Screen to "convert" PDF documents into Print2Screen documents.

How to use a Print2Screen content in a playlist:

1. Start the *Display Assistant* and open your project.

2. Now start another Windows application e.g. Word and create or open the document you want to use as screen content. Choose the print command of your application and make sure that you have selected **"FrontFace Print2Screen"** as printer. This virtual printer is created automatically by the *FrontFace* installation program.

   Especially for this use on 16:9 displays there is also a paper format called **"Display 16:9"** available which you can use instead of common paper formats such as **"DIN-A4"**.

3. After you have printed your document, please return to the *Display Assistant*. A dialog (as shown below) will ask you how you want to use the latest printout:

   - You can add the printout as a new content. In this case you should enter a meaningful name in order to better identify the content later on.

   - In case you choose the option **"Update existing Print2Screen content with this printout"** you have to select an existing Print2Screen content from your project from the displayed list. This one will be overwritten/updated with the printout that you have recently created. After choosing this option you will see a confirmation dialog and you are done.

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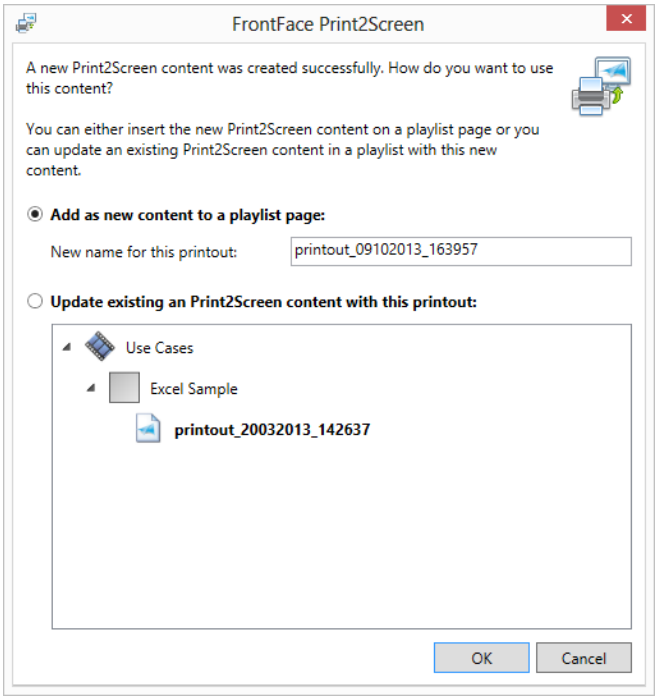
FrontFace Print2Screen
A new Print2Screen content was created successfully. How do you want to use this content?
You can either insert the new Print2Screen content on a playlist page or you can update an existing Print2Screen content in a playlist with this new content.
Add as new content to a playlist page:
New name for this printout:
printout_09102013_163957
Update existing an Print2Screen content with this printout:
Use Cases
Excel Sample
printout_20032013_142637
OK
Cancel

Fig.: The Print2Screen-Dialog allows both adding new content and updating existing content

4. If you previously selected the option to add the printout *as new content* you can now add a new page to a playlist of your project or create a new page. When adding a new content element to that page, the dialog showing the available content types also includes an item named **"Print2Screen"**. Choose this one in order to add the recently created document as screen content.

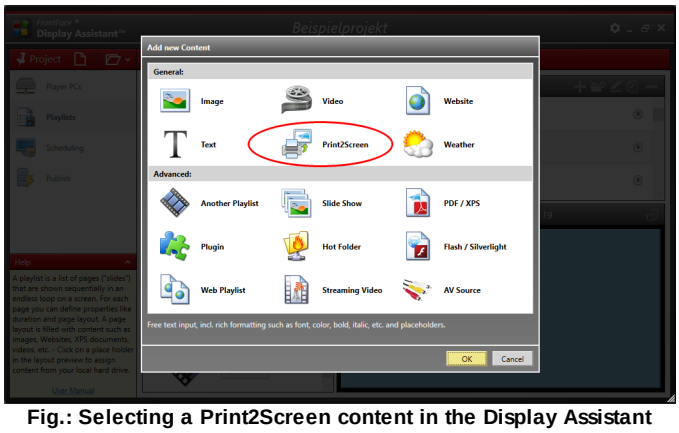

Fig.: Selecting a Print2Screen content in the Display Assistant

5. Finally you can set the desired stretching method, the display duration of a single page (for multi-page printouts!) and a background color. The background color is also used to replace the background color of the "paper" which is usually white. So it is no problem if you create a printout that has a white border because the color of the paper is automatically substituted with the defined background color by *FrontFace* during playback.

In order to update an existing Print2Screen content proceed as described before. After the Print2Screen content has been received by the *Display Assistant*, click on the **"Edit..."** button of a container with an existing Print2Screen object and click on the **"Update"** button in the content properties dialog to replace the old content with the new one.

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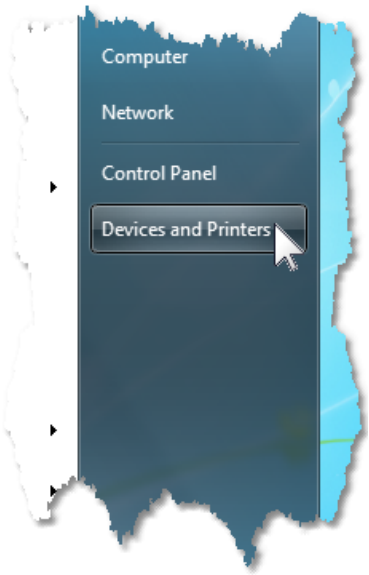
8.1 Custom "Paper Formats"

Normal paper formats such *DIN-A4* or *Legal* do not fit 100% on a typical 16:9 screen. Therefore it can be useful to configure custom, "virtual" paper formats for the Print2Screen printer that perfectly match with the actual screen size or the size of the content container on a playlist page.

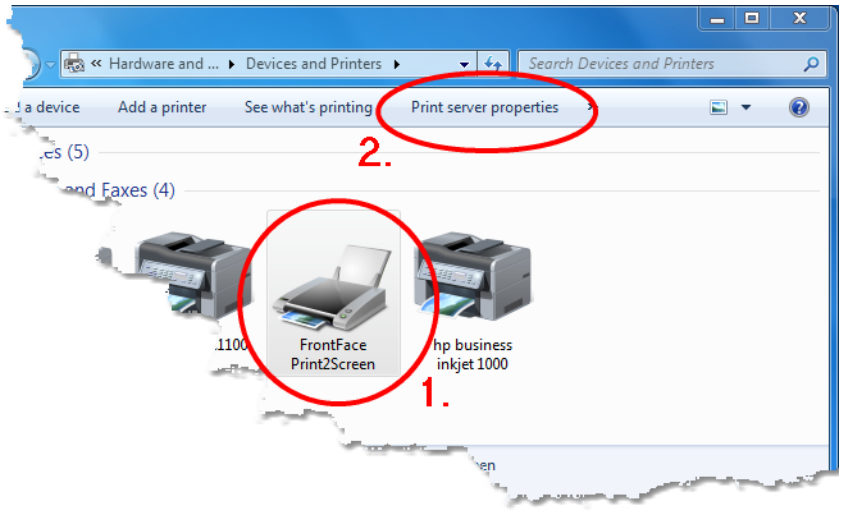
Together with the Print2Screen printer driver a special paper form named **"Display 16:9"** is installed. This fits exactly for 16:9 full screen content. You can select this page format in any application of your choice (e.g. Word).

To create a custom paper size in Windows 7, perform the following:

1. Open the **Devices and Printers** control panel applet.



2. Create a new form size by selecting the **Print2Screen printer** and then clicking on **Print server properties**.



3. On the **Forms** tab, select **Create a new form**; enter a name and select the attributes, then click **OK**.

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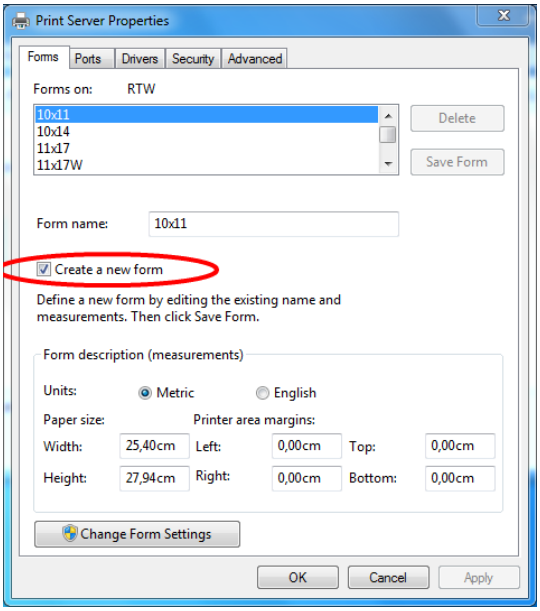
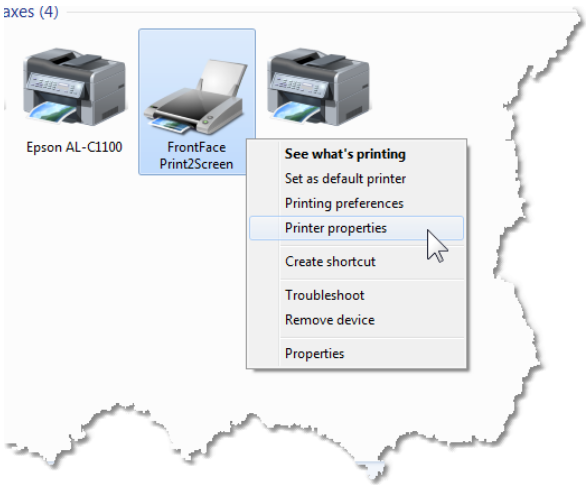


4. Right-click the **`Print2Screen printer`**, and select its **`Printer properties`**.



5. Then click on **`Settings...`** in the tab **`General`**.

6. Select the **`Layout`** tab, and click **`Advanced`**.

7. Under **`Paper/Output`**, select the new custom form created for **`Paper Size`**, then click OK.

We recommend that you play a bit around with the width and height values of your custom paper size to find the right size that is best for you.
Some paper sizes that have proofed to be helpful are:

B: 17,65 cm H: 30,00 cm (16:9 fullscreen)

B: 29,70 cm H: 16,71 cm (9:16 fullscreen)

B: 16,71 cm H: 29,70 cm (16:9 with ticker)

Notice: Also remember that *FrontFace* has a built-in, high-quality scaling algorithm that allows you to show your print-outs in the correct aspect ratio on the screen with a minimum of empty real-estate on the screen. Select **`"Stretching: Uniform to Fill"`** to get the best results

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in the options dialog of a *Print2Screen* content.

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9 Advanced Features

FrontFace for Public Displays offers a lot of advanced features special use cases which are explained in detail in the following sections. If you have any technical questions or problems, feel free to contact the mirabyte technical support.

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9.1 Advanced Options & Help

The button **"Advanced Options & Help"** provides access to a menu in the *Display Assistant* which contains all help resources available as well as the sample project and some advanced configuration options and maintenance features:

QuickStart & Help

This button allows you to access the application's welcome page which contains the QuickStart options (user manual, sample project, creating a new project, etc.).

Send Feedback

The feedback button allows you to send us your comments and ideas online in order to help us to further improve the software.

Update Templates & Plugins

FrontFace for Public Displays comes with various ready-to-use templates (screen and page templates) as well as some plugins. When you install a new version of *FrontFace* (e.g. an update), it is likely that also the templates and the plugins will get updated as well. In order to also use the newest versions of the templates and plugins in your existing projects, please use this function to update your projects.

Warning: In case you have customized the templates of your project your modifications may get lost if you update the templates. In order to prevent this, you should always use different names for your own templates in order to prevent any conflicts with the built-in templates (please see also Individual Customization and Styling).

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9.2 Shared use of a PC as Workstation and Player PC

In the default setup a digital signage display is connected to a dedicated PC which is called player PC. The only purpose of this PC is to run the *FrontFace Player Application*. Therefore a mouse or keyboard is not required on this PC at all.

Sometimes it can be desirable to use a regular desktop PC where the digital signage display is connected to as a secondary screen. This PC can then still be used as a regular workstation PC while the player application is running in the background in order to feed the digital signage display.

You can either install *FrontFace* on this PC using the option "Only install the player application" or "Full installation" (see "step-by-step tutorial"). If you choose the latter option, you can also use the PC for creating and maintaining the content.

The installation and usage of the software does not differ from the normal setup with two PCs (where one PC is a dedicated player PC, see "step-by-step tutorial"). A *Content Update Folder* needs to be defined as well which is used to transfer the content from the *Display Assistant* to the *FrontFace Player Application*. In case the *Display Assistant* and the *FrontFace Player Application* are installed on the same PC it is of course not required to make the *Content Update Folder* available as network share. Nevertheless some modifications have to be made to the installation in order to allow a trouble-free operation on a workstation PC that is used as regular desktop PC and as player PC at the same time.

Notice: In order to be able to apply these modifications you should have basic knowledge about XML and you should know how to edit a text file!

Please open the file **"FrontFace Player.exe.config"** with a text editor of your choice (e.g. Notepad), to apply the following settings:

1.) Set the value for the property **"DefaultScreens"**: In case your digital signage display is connected to the PC as secondary screen, please enter **"0"** instead of **"1"**. This makes the player application start up on the secondary screen and not on the primary one which is needed for the normal use of the PC (0 = first screen, 1 = second screen, ...).

2.) Change **"EnableKeyboardShortcuts"** from **"True"** to **"False"**, in order to stop the player application from reacting to keyboard keys.

3.) Change **"AutoHideMouseCursor"** from **"True"** to **"False"**, to prevent the mouse cursor from being hidden after a certain period of inactivity.

4.) Change **"EnableNumKeyPadSelector"** from **"True"** to **"False"**, to allow the regular use of the numeric key pad.

5.) Change **"ShutdownWindowsShell"** from **"True"** to **"False"**, to prevent the player application from shutting down the Windows Explorer (task bar).

Once you have applied the above changes the player application is ready to be used. Please make sure when you define your schedules in the *Display Assistant* that you assign all playlists to screen 2. Otherwise the primary screen will be occupied by the player application as well and prevents the normal use of the PC.

Notice: In general it is recommended to use a dedicated player PC, because the shared use of a desktop PC as player PC can have some disadvantages (e.g. the user might close the player application by accident or the mouse cursor can get "lost" on the other screen). In order to prevent that a the mouse cursor can move from the main working screen to the large display it is recommended to install a separate tool which limits the mouse cursor to the main screen. A

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suitable freeware tool for this purpose is e.g. Cursor Lock.

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9.3 Embedding Playlists in other Playlists

A **playlist** consists of **pages** which contain **containers** for **contents** such as images, video, Web sites, text, etc.

But it is also possible to embed another playlist into a container within a page. This is a great feature if you want to display certain "static" and "dynamic" elements (playlists) together on the screen.

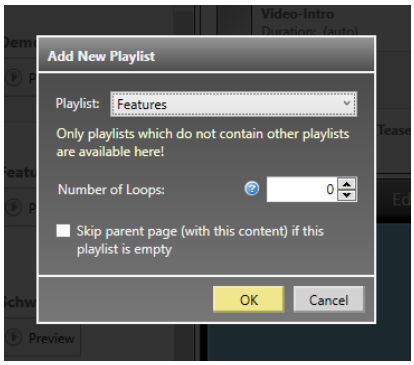

Fig.: Dialog for embedding a playlist into a page of another playlist

Simply select for an empty container **`"Another Playlist"`** and then select the playlist you want to embed. The referenced playlist has to be defined in the same project as the other one.

Additionally you can define the **number of playback loops** for the embedded playlist: A value of "0" indicates that the playlist will be played only once before the next page of the superordinate playlist is shown. A value of "1", "2", "3", etc. defines the number of additional loops of that playlist. A value of "-1" indicates that the superordinate does not wait for the embedded playlist to finish - instead the duration of the current page that contains the embedded playlist defines the overall display length.

Warning: It is not supported to embed a playlist within itself (recursive) or to embed another playlist that also contains references to other embedded playlists. You can only embed playlists which do not embed/reference other playlists by themselves.

If you embed a playlist into another, there is no copy being created but a reference on the embedded one. This causes updates to the embedded playlist to directly affect the superordinate playlist!

This very powerful feature opens up a huge range of useful applications. In the following some examples and suggestions are described:

1.) Creating pages with static and dynamic elements:
You can assign "normal" media objects like images, text, etc. to containers of a page which represent the "static" elements and a playlist to another container on that page which then represents a dynamic element. While static elements remain all the same while the page is shown, the dynamic parts show a playlist with transition effects and multiple pages. This allows you to create great-looking presentations on the screen.

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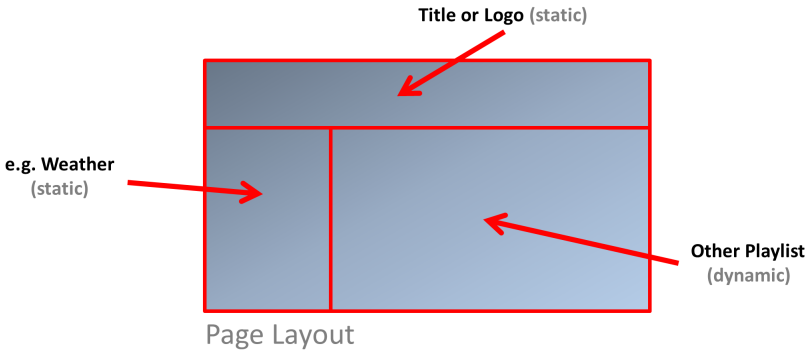
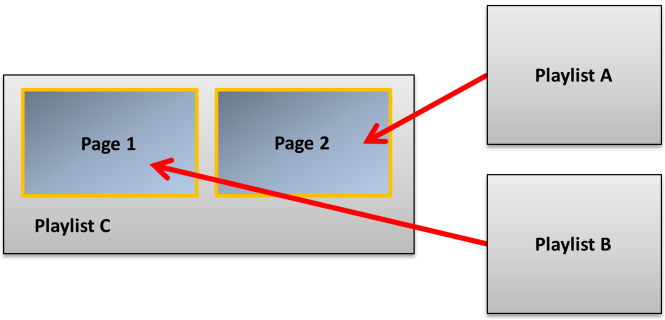


Page Layout

2.) Linking different playlists:

If you want to link playlists with each other (e.g. display a playlist A followed by a playlist B, etc.) you normally have to do this by defining schedules for the different playlists. This can be quite complicated, though. The easier approach is to define an extra playlist C which contains full screen pages which show the other playlists. If you now play playlist C the first page is shown which actually runs playlist A. After the next page of playlist C is shown which displays playlist B. So playlist C is continuously showing playlist A and B one after the other.



3.) Simplifying the content update workflow:

In some cases a display presentation might contain content that is shown all the time (e.g. general information) and other content that changes from time to time (e.g. latest news that need to be constantly updated). Instead of maintaining all content in one big playlist that might be difficult to manage, you can split the playlist up into two different playlists which are linked to each other. Now you only need to update one of these playlists while the other one can remain the same all the time. This simplifies the workflow and helps you to maintain a better overview of your display project. In case your superordinate playlist only consists of a single page, please make sure that you have read the special notes about "Playlists with a Single Page"!

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9.4 Playlists with a Single Page

Playlists that only have a single page have a special behavior: Usually the pages of a playlist are shown as an infinite loop. But if the playlist only contains a single page, this page is shown permanently and it is not running in a loop. This means that the content on that page is only loaded once and then shown forever. This allows creating static pages very easily that are supposed to show the same content all the time.

If this single page contains a video, a slide show, a Web page or an embedded playlist, the video or the playlist are only shown once whereas a Web page will only be loaded once.

Notice: If you want to show the video on that single page in a loop you have to toggle the **"Infinite Loop"** property of that video in the *Display Assistant*. In order to update a Web page (reload) you can specify a reload interval (in [sec.]) for that Web page in the *Display Assistant* (e.g. set a value 120 to reload the page every 2 minutes). For embedded playlists you have to set the repeat count from "0" to "-1" to show it forever.

In order to make also playlists with one single page to loop (=reloading), simply create a copy of the playlist page so that the playlist then contains two identical pages. When you now set the page duration to a rather high value like e.g. 60 minutes, the playlist page (and also its' content) gets reloaded every 60 minutes.

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9.5 Using the News Ticker Tape

When choosing a screen layout for a playlist that also contains a news ticker tape, you can either define **custom text, text from a text file** or **RSS news feed** to be shown in the ticker bar. These RSS formats are supported: RSS 2.0, RSS 1.0/RDF and Atom. There are both screen layouts with a news ticker tape available that contain a real time clock and those that do not contain a clock.

Simply enter the text you want to display, line-by-line, in the text box of the playlist properties window in the *Display Assistant* or enter the URL to an RSS news feed such as CNN (http://rss.cnn.com/rss/edition.rss). Alternatively, you can also enter the URL to an UTF-8 encoded text file instead of an RSS file. The content of the text file will then be displayed line-by-line as news ticker headlines. Instead of an Internet URL (http://www.example.com/news/ticker.txt) you can also enter a local file name using the file protocol (file:///c:\news\ticker.txt).

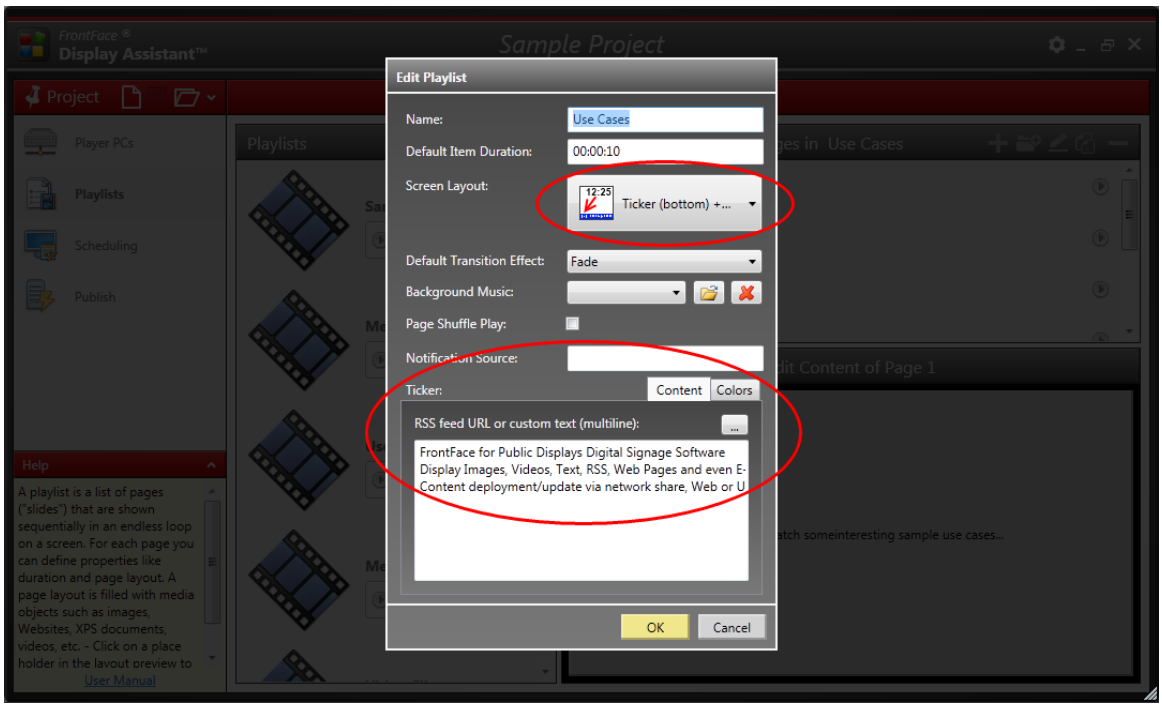

Fig.: Properties dialog of a playlist page which also contains the settings for the news ticker (screen layout and ticker settings)

Please note that the ticker will only be shown if you choose a screen layout that contains a news ticker bar (either on the top or on the bottom of the screen).

Furthermore you can set the font and the colors of the news ticker as well as the scrolling speed in the playlist properties window.

Other aspects like the size of the ticker can also be customized. But therefore it is required to modify the appropriate screen layout. Some languages like Arabic of Hebrew also need to reverse the scrolling direction of the news ticker (see section Adjusting the Language of the Player Application for details).

It is also possible to use placeholders in the news ticker text in the same way, as with text elements inside a playlist page. The placeholders get filled with the final text either when publishing the playlist (in case the playlist is started by a timer) or in the moment when an event is fired (if the playlist is started by an event source).

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9.6 Using the Weather Widget

FrontFace for Public Displays comes with a built-in weather widget that can display the current weather conditions, a daily forecast and a 3-day forecast for a given location.

Simply add a **"Weather"** content object to a playlist page. In the settings dialog you can customize the widget in regards to colors, icon style and font.

In order to show the weather conditions and forecast for a location you have to enter the location name in the field **"Location"** using English spelling (e.g. "Munich" instead of "München"). Please make sure that you select the final location name from the drop down list using the mouse. In case your location/town does not appear in the list, please select the next bigger town nearby that is found in the list. You can then enter the name of your town in the field **"Alternative Display Name"** to override the name that appears on the screen.

The weather data is updated approximately every three hours. The small time stamp that is shown in the lower right corner on the screen in the weather widget is not the date/time when the data was fetched last from the Web but the time stamp of last observation of the currently shown weather data.

Notice: When you create a playlist with only one single page that contains the weather widget, the data will NEVER be updated automatically while the playlist is shown because it is a static page. To force an update from time to time, simply create a copy of that playlist page so that your playlist now contains two identical copies of that page. This will make the weather widget to update every time the playlist flips. If you set the page duration for the pages e.g. to 60 minutes and select no transition effect, the page flip is almost seamless.

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9.7 Clock, Date and Countdown

FrontFace for Public Displays comes with a clock plugin that can either show a digital or analog clock and the current date in various formats as well as a timer ("egg timer") or a countdown clock.

Add a new **"Plugin"** content object to your playlist page and select the **"Clock"**. In the settings dialog of the plugin you have to first select the "style" (*Analog, Digital, Date, Timer* or *Countdown*). Depending on your selection you can then customize further settings:

"Analog"," Digital" and "Date":

The options "Time Format" and "Date Format" define the way how date and time values are being displayed on the screen:

Default Date and Time Format*	Result on the Screen
T	5:25 pm
d	15-05-2015

*) The way how the date and time is formatted also depends on the language/locale that is set on the player PC. On a German PC the time will e.g. appear as "17:25".

Instead of using the default formatting, you can also compose your own, custom format by using the following format strings:

Format String	Description	Result on the Screen
dddd	The full name of the weekday	Wednesday
MMMM	The full name of the month	May
yy	The year with two digits	15
yyyy	The year with four digits	2015
HH	Hours with leading zero	09
mm	Minutes with leading zero	03
d.	The day of the month	15.
d. MMMM	The day and the full name of the moth	15. May
HH:mm	The hours and minutes, both with leading zero	15:45
dddd, dth of MMMM yy	The date with the full name of the weekday, the month and day of the month and the year with two digits	Wednesday, 15th of May 15

A detailed overview and description of all custom format strings can be found here.

"Timer":

A timer ("egg timer") allows you to define hours, minutes and seconds that are counted down every time the playlist page with the plugin is shown. During the last three seconds, the remaining time is shown as blinking text.

"Countdown":

A countdown lets you specify a date and time which indicates the end of the countdown. You can also define how the remaining time of the countdown is shown on the screen.

Format String	Result on the Screen

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{0:00}T {1:00}S {2:00}M {3:00}S	05T 10S 50M 29S
{0:00} Days {1:00} Hours {2:00} Minutes {3:00} Seconds	05 Days 10 Hours 50 Minutes 29 Seconds
{0:00}d {1:00}h {2:00}m {3:00}s	05d 10h 50m 29s
{0:0} Days and {1:00} Hours und {2:00} Minutes!	5 Days and 10 Hours and 50 Minutes!

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9.8 Using Plugins

Plugins represent another possibility to extend the existing functionality of *FrontFace for Public Displays*. A plugin can basically provide any kind of custom functionality of a content. A common example is a plugin that accesses a Web Service and visualized the requested data on the screen.

mirabyte already offers some ready-to-use, domain- and application-specific plugins which are available separately. But it is also possible for you to develop your own custom plugins. For this purpose, a dedicated **Plugin SDK (Software Development Kit)** is available.

The programming technologies for developing a *FrontFace for Public Displays* plugin are WPF (Windows Presentation Foundation) and .NET. Basically all existing .NET programming languages can be used to write a plugin for *FrontFace*; this includes C#, VB.NET and many others.

In case you need a special functionality that is not provided by *FrontFace for Public Displays* out-of-the-box, you can contact mirabyte regarding custom plugin development.

Two different types of plugins are supported:

- **Media Object Plugins**
  This plugin type is used to display special types of content on the screen that would otherwise not be supported by *FrontFace*. Also content from remote data sources can be integrated by the use of a plugin. A plugin behaves similar to the regular content types that are supported such as images, videos, PDF or Web pages and can be integrated into playlist pages. A plugin as a configuration interface that allows the user to configure an instance of the plugin in the *Display Assistant*. Additionally, every plugin has also a presentation interface that shows/ displays the actual content on the screen in the player application. E.g. the "clock" plugin that comes with *FrontFace* can be configured to show either an analog or a digital clock. Within a playlist page the clock is then shown using the configured style.

- **Event Source Plugins**
  Event source plugins are used to integrated external systems that generate events which then trigger a certain playlist on the screen. By using an event source plugin, you can e.g. integrate an RFID reader that shows specific content on the screen depending on which RFID transponder is scanned by the reader. This allows e.g. to show a specific staff roster based on the ID card of the employee who stands in front of the screen. *FrontFace* comes with the "Calendar" event source plugin that provides a calendar for managing appointments which trigger playlists (e.g. for a personalized welcome message on a welcome board).

How to install and use a Plugin:

In order to use a plugin, please copy the plug-in file (DLL) and any other files that belong to the plugin into a new folder in the "**`\Plugins\`**" folder of your project folder (this is the folder where the **`.ffpdx`** file resides that you open with the *Display Assistant*!). After that, you can select the plugin in the *Displays Assistant* when assigning a new **`"Plugin"`** content to an empty container of a playlist page. Furthermore you can also add initialization parameters for the plugin, if required. You can also create a separate sub folder with a custom name for each plugin in the "**`\Plugins\`**" folder for a better overview in case you are using many plugins in your project.

Event source plugins need to be installed in the "**`\Plugins\Event Sources\`**" folder or a sub folder of this in order to be available in a project. Use the tab **`"Events"`** in the menu **`"Scheduling"`** of the *Display Assistant* to use an event source plugin.

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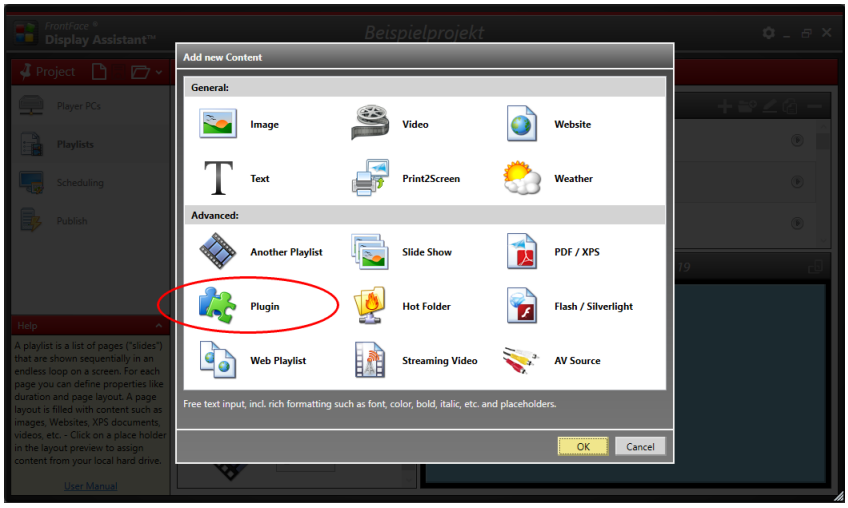

Fig.: Selection of a plugin when inserting new content in the Display Assistant

Notice: Instead of installing a plugin into the folder "**`\Plugins\`**" (for media object plugins) or into the folder "**`\Plugins\Event Sources\`**" (for event source plugins) in the project folder, you can also install the plugin in the "**`\Plugins\`**" folder of the installation folder of *FrontFace* (by default this is **`"C:\Program Files (x86)\mirabyte\FrontFace for Public Displays\"`**). In this case the plugins will be available automatically for all newly created projects. To also use the plugins which have been installed this way with an existing project, please update the project first!

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9.9 Working with Placeholders

Besides various content types you can also add **(formatted) text** to your playlists. This allows you to easily display text like welcome messages on reception screens or to implement text elements that need to be changed frequently (e.g. price tags). It is possible to either enter the text directly or to use so called **placeholders**.

Placeholders are being either replaced by user-defined text during the publishing process or in the moment when an event is raised by the scheduling feature. Placeholders can be regarded like a variable. Placeholders are defined by a double dollar sign at the beginning and at the end (e.g. **`"$$A Sample Placeholder$$"`**). Simply enter placeholders manually in the same way as normal text in text editor of the **"Text"** content type or use the button **`"Insert placeholder..."`**.

Fig.: The text editor of the Display Assistant allows you to insert placeholders

Notice: If you preview a playlist the placeholders will be shown on the screen. Only when you publish the project or when the event-based scheduling is used, you will be queried for the actual placeholder values by the *Display Assistant*!

Hint: It is not only possible to use placeholders in text elements, but also in the news ticker tape. The way how placeholders are defined and used in the news ticker is identical to normal text elements, as described in this section.

How placeholders work:

After you have added a **"text"** content object in a playlist with at least one placeholder, you can assign this playlist either directly to a screen, by using a timer or by using an event source in the **`"Scheduling"`** menu of the *Display Assistant*. How the actual values (text) for the placeholders a being assigned depends on which type of scheduling you use for this playlist:

- **Direct assignment of the playlist or time-based scheduling using a timer:**
  For every placeholder you have defined, a dialog window will appear during the publishing process which asks for the actual value of the placeholder that is then used as replacement for the placeholder in the text. In order to enter line breaks, please use the "|" character. Every time

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you publish the project, the *Display Assistant* will ask for new values for the placeholders.

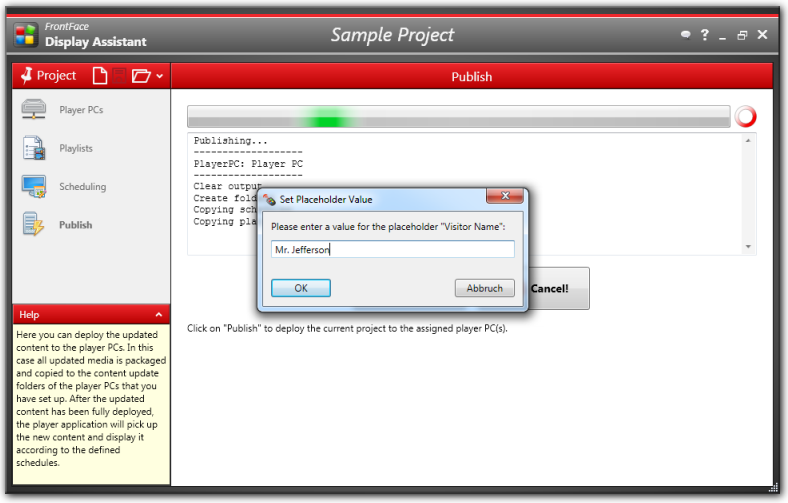
FrontFace
Display Assistant
Sample Project
Project
Publish
Player PCs
Playlists
Scheduling
Publish
Help
Here you can deploy the updated content to the player PCs. In this case all updated media is packaged and copied to the content update folders of the player PCs that you have set up. After the updated content has been fully deployed, the player application will pick up the new content and display it according to the defined schedules.
Publishing...
PlayerPC: Player PC
Set Placeholder Value
Please enter a value for the placeholder "Visitor Name":
Mr. Jefferson
OK
Abbruch
Cancel!
Click on "Publish" to deploy the current project to the assigned player PC(s).

Fig.: The input prompt is asking for the actual text of a placeholder during the publishing process

Hint: You can also use the same placeholder on multiple pages. In this case the value will be queried on once by the *Display Assistant* during the publishing process. If you not enter a text at all, an empty text will be inserted which makes the placeholder actually "invisible".

- **Event-based scheduling of the playlist using an event source:**
  In case you use an event source, the assignment of the actual values to the placeholders is done by the selected event source plugin. If you e.g. use the "Calendar" event source plugin, you define appointments in a calendar that trigger the playlist at the time of the appointment. Apart from start/end date/time you can also define the values for the placeholders of each appointment. Every time the event source triggers the playlist, the placeholders are then being replaced by the values defined in the current appointment. In the next section an example is given that shows how to use this functionality to implement a welcome board system that shows personalized welcome messages to visitors.

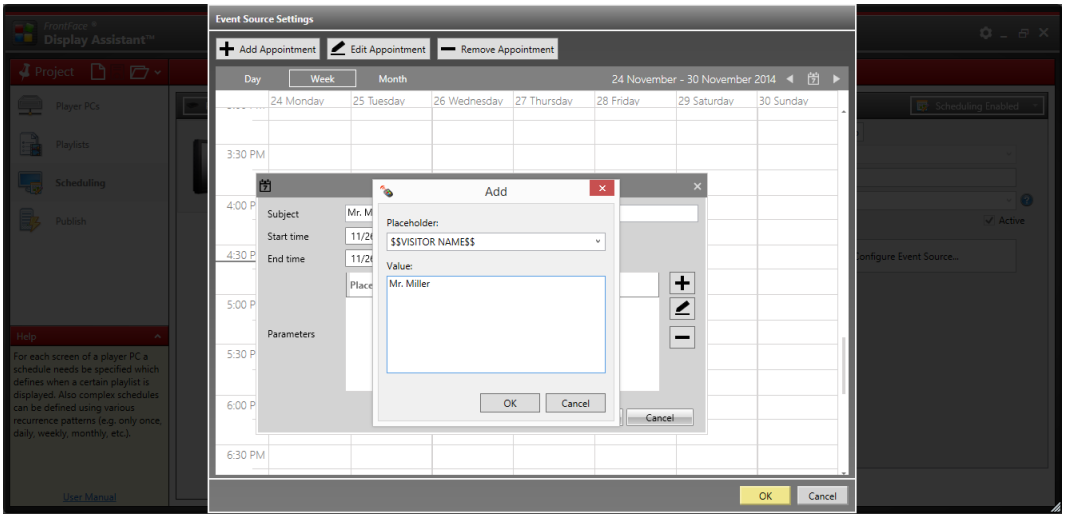

Fig.: Entering a value for a placeholder in an event source plugin (this screenshot shows the "Calendar" event source plugin)

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9.9.1 Example: A Welcome Board with Placeholders

Welcome screen or welcome board is used at a company's reception desk to show general information and news about the company. If a visitor is expected, instead of the general information a personalized welcome message is shown (e.g. "Welcome Mr. Miller!").

Showing a welcome message can be achieved on two different ways, but both using the placeholder feature of FrontFace. Either the switch between "default mode" and "welcome mode" is made manually. In this case an ad hoc welcome message can presented to visitors. Or the times during which visitors are expected are stored in a calendar which then triggers the welcome message automatically based on the appointments in the calendar.

Option A - Ad hoc welcome messages with manual switching:

Whenever a visitor is expected, the clerk is supposed to start an alternative playlist which consists of only one page showing the name of the visitor and a personalized welcome message.

In order to keep the clerk from having to change the playlists in the "Scheduling" menu, two (!) separate projects are being created using the *Display Assistant*. Both contain a single playlist which is activated by a "Daily" timer in order to make them start immediately once published. Both projects target the same (!) player PC (which controls the welcome screen). That means that for both projects the same Content Update Folder is entered.

The first project contains a playlist with general information which is used when no visitor is expected. By using the "pin icon" of the *Display Assistant* a shortcut for automatically publishing this project is created on the Windows Desktop of the clerks PC.

The second project also contains a single playlist with only one page which has a text content element with the following text: **`"Welcome to our company, $$Visitor Name$$!"`**. **`$$Visitor Name$$`** is a placeholder in this case. A Desktop shortcut for automatically publishing this project is created as well.

Now, the clerk can start the default or the welcome playlist by simply double-clicking on the appropriate Desktop shortcut. If the welcome project is chosen, an **input dialog** will be shown which prompts the clerk to enter the name for the expected visitor. If he enters "Mr. Jefferson", the screen will show: **`"Welcome to our company, Mr. Jefferson!"`**

Option B - Scheduled welcome messages using a calendar:

In this case, also two playlist are being created, one for the "default mode" and the other for the "welcome mode" (using a placeholder). However, this time both playlists are added to a single project!

The playlist for the default mode is assigned by a "daily" timer in the "Scheduling" menu of the *Display Assistant* for permanent playback.

Additionally an event source is added in the **`"Events"`** tab of the "Scheduling" menu of the *Display Assistant* which uses the "Calendar" event source plugin. The welcome playlist is then assigned to this event source.

By hitting the **`"Configure Event Source..."`** button you can now open up the calendar which is used to store the appointments that define when a visitor is expected. For every appointment you can define a start/end date/time as well as the actual value for the placeholder which is in this case the name of the visitor that is expected.

After publishing the project the *FrontFace Player Application* will show the default playlist and whenever an appointment from the calendar is due, the welcome playlist with the name of the

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specific visitor filled in.

9.9.2 Using Exchange and Lotus Notes Calendars

Instead of the built-in calendar of *FrontFace* you can also integrate existing **Exchange** or **Lotus Notes** calendars with appropriate Event Source Plugins (available separately).

Exchange Calender:

The Exchange Calendar event source plugin allows the integration of Microsoft Exchange calendars using EWS (Exchange Web Services) to start playlists based on appointments in the calendar. Furthermore, you can also use appointments to assign text placeholders in your playlists. This makes the Exchange Calendar plugin a perfect choice for implementing a convenient, time-controlled welcome board for visitors where the actual appointments can be managed using Outlook.

Lotus Notes Calender:

The Lotus Domino Calendar event source plugin allows the integration of Lotus Notes calendars on a Lotus Domino server to start playlists based on appointments in the calendar. Furthermore, you can also use appointments to assign text placeholders in your playlists. This makes the Lotus Domino Calendar plugin a perfect choice for implementing a convenient, time-controlled welcome board for visitors where the actual appointments can be managed using Lotus Notes.

In case you want to display the calendar data as a table/schedule on the screen, please use the Schedules and Timetables Plugin which is also available separately. This (Content) Plugin allows you to display schedules and/or occupancy plans for rooms either for an individual room or an overview for all rooms. The (live) data for the plugin can be provided as an Excel file, as an Exchange calendar (via EWS = Exchange Web Services) or as a Lotus Domino calendar. The calendars can then conveniently be edited using Outlook or Lotus Notes.

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9.10 Integration of TV Programs and AV Sources

FrontFace for Public Displays is not only capable of playing video files like WMV or AVI - it is also possible to integrate live AV sources such as TV or a video signal from an external DVD player or a Webcam.

- **DirectShow AV Source**
  Allows the integration of live AV sources such as Webcams or video grabbers.

- **Live TV Plugin**
  Allows the integration of live TV channels.

9.10.1 DirectShow AV Sources

Basically **any DirectShow video source** and any **audio source** can be used. DirectShow video devices include Webcams, video-in ports of graphics adapters and external (USB) AV bridges (such as cheap video grabber cards). If you have any questions concerning the hardware, please feel free to contact mirabyte support.

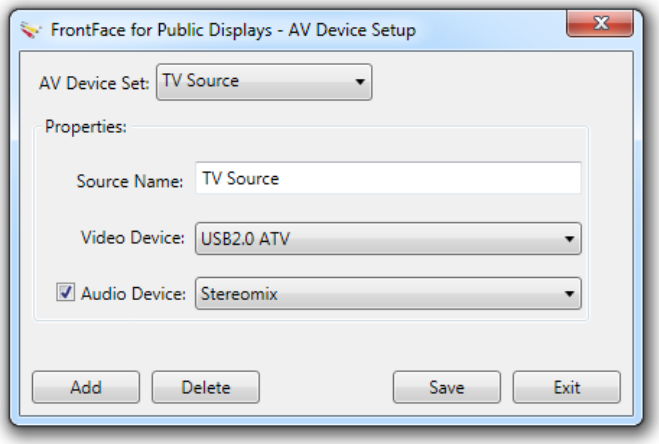

Fig.: FrontFace for Public Displays AV Device Setup

How to integrate an external AV source (e.g. a TV set top box):

1. Connect a compatible video grabber card to the player PC and connect it with the external AV source (e.g. a TV set top box or a DVD player).

2. Install the drivers of the video grabber card.

3. Start the *AV Device Setup* of *FrontFace for Public Displays* (**"AVDeviceSetup.exe"**) on the player PC (the file is located in the installation folder of *FrontFace for Public Displays*, which is by default **"c:\Program Files (x68)\mirabyte\FrontFace for Public Displays \"**).

4. Select a video source and an optional audio source. Give your selection a meaningful name, e.g. "Live TV" and then save the configuration.

5. Add a new page to your playlist the in the *Display Assistant* and add a new "AV Source" content. In the settings dialog of the content enter the name of the AV source that you have configured in the previous step ("Live TV").

6. Publish the playlist as usual to the player PC. Once the page with the AV sources appears, the video signal of the AV source will be shown.

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It is also possible to configure multiple AV sources (e.g. "Live TV" and "Web Cam") for use within your playlists.

Notice: In order to be able to see a video signal, you have to set the color depth of the graphics adapter (Windows Display Settings) to **32-Bit**! In order to also hear an audio source that you have configured, make sure that you make the following settings in the audio settings of Windows (Recording Devices): Select the device from step 4 and select the option **"Playback" > "Use this device as playback source"**.

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9.10.2 TV Channels with Live TV Plugin

The **Live TV Plugin** that is available separately allows the integration of live TV channels into *FrontFace* playlists. The open source software *MediaPortal* is used as TV server in this setup. *MediaPortal* is actually intended for the use with HTPCs (home theater PC). It supports most common TV tuner cards and can also cope with HD channels and encrypted programs such as pay TV channels on Windows-based computers.

A free trial version of the *Live TV Plugin* which allows the integration of *MediaPortal* is available on the *FrontFace for Public Displays* product Website in the download area. The package also includes a detailed step-by-step guide the explains how to set up and use the Live TV Plugin and *MediaPortal*.

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9.11 Integration of Internet Radio Stations

Audio streams can be integrated as background music in a FrontFace for Public Displays playlist or playlist page. If the radio station supports the ASX format, you can simply download the ASX file to your computer and select it as background music (in the settings dialog of a playlist or playlist page).

In this article you learn how to integrate an audio stream from the Shoutcast Internet Radio Portal in *FrontFace for Public Displays*:

1. Go to http://www.shoutcast.com/ and select an Internet radio station of your choice.
2. Download the ".pls" (Winamp format) file to your computer by using **"Right Click > Save as..."** and open it in a text editor. Look for the line with the actual streaming URL which starts with file1=...
3. Create a new text file with the following content:

```
<asx>
   <entry>
      <ref href="URL"/>
   </entry>
</asx>
```

4. Replace **"URL"** by the URL of the audio stream you have just extracted from the ".pls" file. Now save the new text file with the ".asx" file extension.
5. Finally select the ASX file in *FrontFace for Public Displays* as background music for your playlist or playlist page.

Notice: Because audio streams are being buffered, it might take a few seconds before the playback starts.

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9.12 Integration of Web Pages

Web pages can be integrated into *FrontFace* like any other content (images, video, text, etc.). You only need to provide the URL of the Web page you would like to display. Additionally, a zoom factor can be defined for every Web page you integrate which makes sense in case the Web page has not been optimized for being displayed on a large format screen. You can also define if the Website should be interactive (mouse and keyboard may be used to interact with the page) or not.

Apart from normal Web pages that are referenced by Web URLs, you can also integrate offline HTML pages.

The browser engine of *FrontFace* supports modern Web standards such as HTML5, CSS3, JavaScript and also browser plugins such as Flash or Silverlight. Here is an overview of the supported features: https://html5te.st/e41ffe258705c6f6

In case you run your *player PC* behind a proxy server, there might be some additional configurations changes you have to apply in order to make any Web pages appear on the screen.

If you need to integrate Web pages that use *Basic Authentication* you can enter login and password for every Web page as well. Please keep in mind that since these credentials are stored (encrypted) in the playlist file, this still is a potentials security risk!

FrontFace does also support transparent Web pages (Web pages that have a transparent background color). If combined with "Overlay" page layouts, you can create really interesting visual effects. In order to display a Web page with a transparent background, you have to enable the transparency feature in the Web page dialog of the *Display Assistant* and also your Web page needs to define the transparent background color which can be achieved by using the following CSS rule:

```
BODY {
      background-color: transparent;
}
```

Notice: In case you want to use special browser plugins or features that are not supported by the integrated browser engine of *FrontFace* or that only work partially, you can also use the Internet Explorer Web Browser Plugin (free) to integrate Web pages into your playlists as an alternative.

9.12.1 Embedding Offline HTML Content

By using the **content type "Website"** you can easily integrate HTML-based Web pages into your playlists. You only need to enter the URL of the Web page you want to display.

Apart from that, it is also possible to integrate local (offline) HTML content (incl. CSS, images, Flash, etc.) into your playlists. This can be very helpful if your player PC does not have access to the Internet. In this case, all HTML file as well as any accompanying files (images, CSS, etc.) get copied together with the playlist to player PC.

How to embed local (offline) HTML content into a playlist:

1. Make your that your "Website" is working offline. All HTML pages, images, CSS files and other dependencies are supposed to be in available in a local folder. You can also use sub folders to organize dependencies such as images.
2. Open the project folder of your current *FrontFace for Public Displays* project in the Windows Explorer and select the folder **"Media"**. Now create a new folder **"Static"** (if this one does not exist yet).

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3. Copy your HTML files and all dependencies into this folder.
4. Add a new **"Website" content** to your playlist in the *Display Assistant* and reference the local HTML file by its relative path. If your HTML file has the name **"demo.html"**, simply enter **"..\Media\Static\demo.html"** as URL.

After that, you can preview or deploy your playlist as usual. All files which reside in the **"Static"** folder will then be copied to the player PC(s) automatically by the *Display Assistant*.

9.12.2 Using Web Playlists

Integrating (individual) Web pages (HTML) in *FrontFace for Public Displays* is easy. However, whenever you want to add a new Web page to a playlist you have to do this in the *Display Assistant* and republish the project. When using a Web CMS or an Intranet software to manage content it can be desirable to not only manage the content of Web pages but also the the actual pages that are supposed to be shown (e.g. instantly adding or removing Web pages from the playlist).

This is also possible by using a **Web Playlist** (a sequence of Web pages). A Web Playlist can be regarded as a playlist within a playlist where the embedded playlist solely consists of Web pages. Which Web pages are being shown is defined by one of these ways:

- **By providing a RSS file (XML feed)**
  e.g. **"http://www.example.com/feed.rss"**

- **By providing the path to a network folder that contains HTML files**
  e.g. **"\\SERVER\Directory\"** oder **"X:\Directory\"**

When ever a Web Playlist is shown, the *FrontFace Player Application* will request the RSS file and then shows the Web pages with are linked in the RSS file, one after the other. In case a network folder is given as source the software will enumerate all HTML files (*.htm;*.html) in that folder and show them one after the other.

More advanced options for RSS feeds:

If you now also create the RSS file dynamically using your Web CMS, it is possible to control which Web pages are shown without having to modify or republish the FrontFace display project.

Any RSS file (RSS 2.0 or Atom) can be used. Additionally you can add some optional, *FrontFace*-specific extensions to that file to also control properties like display duration of a page or the transition effect that is going to be used.

Example of an RSS feed for a Web Playlist with *FrontFace*-specific extensions:

```
<?xml version="1.0" encoding="utf-8"?>
<rss version="2.0" xmlns:ffpd="http://xml.mirabyte.com/1.0/
frontfaceWebFeed.xsd">
  <channel>
    <title>Web Slide Show</title>
    <lastBuildDate>Thu, 22 Nov 2012 15:53:38 +0100</lastBuildDate>
    <item>
      <title>Page 1</title>
      <link>http://www.example.com/page1.html</link>
      <description>Page 1</description>
      <pubDate>Fri, 23 Nov 2012 10:27:08 +0100</pubDate>
      <ffpd:duration>30</ffpd:duration>
    </item>
    <item>
```

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```
      <title>Page 2</title>
      <link>http://www.example.com/page2.html</link>
      <description>Page 2</description>
      <pubDate>Fri, 23 Nov 2012 10:26:50 +0100</pubDate>
      <ffpd:transitionEffect>CubeTop</ffpd:transitionEffect>
    </item>
    <item>
      <title>Page 3</title>
      <link>http://www.example.com/page3.html</link>
      <description>Page 3</description>
      <pubDate>Fri, 23 Nov 2012 10:26:36 +0100</pubDate>
    </item>
  </channel>
</rss>
```

The duration property of a page (**<ffpd:duration>**) can be defined in seconds. As transition effects (**<ffpd:transitionEffect>**) you can choose from the set of effects that are available in the *Display Assistant*: **Default, None, Fade, SlideLeft, SlideRight, CubeTop, CubeBottom, CubeLeft, CubeRight, FlipTop, FlipBottom, FlipRight, FlipLeft**

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9.13 Using Flash, Silverlight and other Browser Plugins

You can display any normal HTML5/CSS3-based Web pages in *FrontFace for Public Displays*. Even JavaScript is fully supported.

In case you want to also use browser plugins such as *Flash* or *Silverlight*, please make sure that these plugins are installed correctly. If multiple versions are available (like in the case of the Flash plugin), please install the version for **Mozilla Firefox** on the player PC. It is recommended to install Firefox on the player PC and to use it to install the correct plug-ins from the following Websites:

- Adobe Flash: http://get.adobe.com/flashplayer/
  (**Important:** Please make sure that you download and install the Flash plugin for the **Firefox Browser**, not for the IE!)
- Microsoft Silverlight: http://www.microsoft.com/getsilverlight/

Using Flash and Silverlight in the browser:
Simply create a new **"Website"** content and assign an URL to it that references to a Website where Flash and/or Silverlight content is used.

Using Flash and Silverlight content directly:
It is also possible to directly embed **`*.swf/*.fla`** (Flash) or **`*.xap`** (Silverlight) files. Select the **content type "Flash/Silverlight"** and then choose a local file with one of these file extensions. It is also possible to pass custom parameter values to the Flash or Silverlight object. In case of Flash the parameters are passed on using the **`FlashVars`** parameter while the **`initParams`** parameter is used in case of Silverlight.

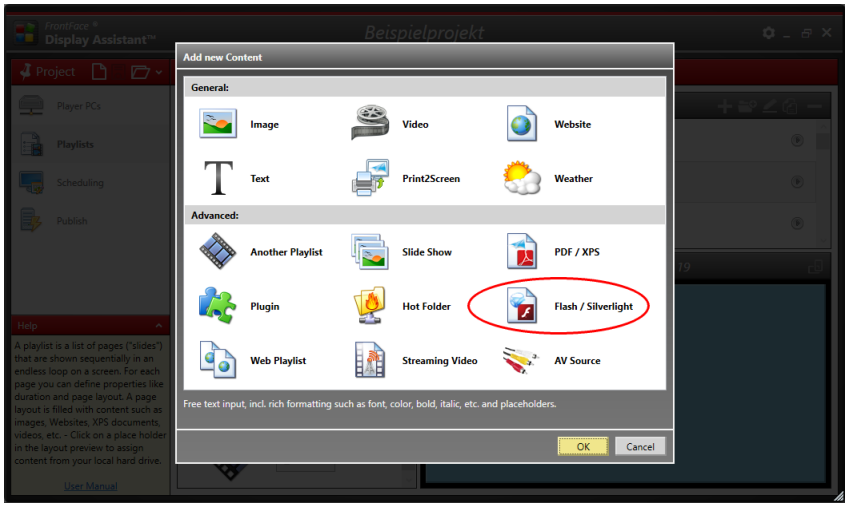
Display Assistant
Beispielprojekt
Project
Player PCs
Playlists
Scheduling
Publish
Help
A playlist is a list of pages ("slides") that are shown sequentially in an endless loop on a screen. For each page you can define properties like duration and page layout. A page layout is filled with content such as images, Websites, XPS documents, videos, etc. - Click on a place holder in the layout preview to assign content from your local hard drive.
User Manual
Add new Content
General:
Image
Video
Website
Text
Print2Screen
Weather
Advanced:
Another Playlist
Slide Show
PDF / XPS
Plugin
Hot Folder
Flash / Silverlight
Web Playlist
Streaming Video
AV Source
Free text input, incl. rich formatting such as font, color, bold, italic, etc. and placeholders.
OK
Cancel

Abb.: Selection of a Flash/Sliverlight content in the Display Assistant

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Warning: In case your Flash object accesses data from the Internet, this will most likely fail. The reason for that is a security feature of Flash which prevents local Flash objects from accessing data from the Internet. In order to make your local Flash objects work as expected, you have to make some modifications to the security settings of Flash on your player PC*:

Launch **"FlashPlayerApp.exe"** (located in **"c:\Windows\System32\"** or **"c:\Windows\SysWOW64\"** on 64 bit systems) and click on the *"Advanced"* tab. Then click on on *"Trusted Location Settings..."* and add the content cache folder of the FrontFace player application to the list of trusted locations. This is by default: **"C:\ProgramData\mirabyte\FrontFace for Public Displays\Content Cache"**.

*) in case you want to preview the Flash object on your local PC you also have to apply these settings to your local PC. In this case you have to add the project folder location of your *FrontFace* project to the list of trusted locations!

9.13.1 Embedding YouTube Videos

Since *FrontFace for Public Displays* has an integrated Web browser that also supports HTML5 and Flash it is possible to also integrate YouTube videos into your playlists.

First install the Flash plugin on the player PC (see Using Flash, Silverlight and other Browser Plugins).

Then visit the YouTube Website (http://www.youtube.com) and pick a video you would like to embed. You have to identify the video ID of that video and you have to write down the length of that video. The video ID is part of the URL (which is shown in your browser's address bar). The length of the video is shown on the YouTube page itself.

Example:

Let's assume you would like to embed the YouTube video from this page:

http://www.youtube.com/watch?v=q7ENIrkqrFQ

In this case the video ID is **q7ENIrkqrFQ**.

Now, add a new page to your playlist in the *Display Assistant* and add a new "Website" content to that page. Enter the following string as URL:

http://www.youtube.com/embed/VIDEOID?autoplay=1&controls=0&showinfo=0

Make sure that you replace **VIDEOID** with the video ID you have just identified. So the full URL you have to enter is:

http://www.youtube.com/embed/q7ENIrkqrFQ?autoplay=1&controls=0&showinfo=0

Finally you have to set the duration of the page with the YouTube video to the length of that video. Since the YouTube video is streamed from the Web *FrontFace for Public Displays* can otherwise not detect when the video has ended.

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9.14 Dynamic Playlists (Hot Folder)

Normally you compose the contents of a playlist using the *Display Assistant* and then publish it to the player PC. In certain situations it may be desirable to define a certain folder which will then serves as a dynamic source for the playlist. By adding, deleting or updating files in this folder the displayed content is controlled directly.

FrontFace supports this features which is called *"Hot Folder"*: Simply add a new *"Hot Folder"* content object to a playlist page and assign a network path to it (e.g. **`"\\MY-SERVER\Shared Folder\"`**). It is very important that this network folder is accessible by the player PC since the player PC will scan this folder for displayable files at runtime.

Inside the hot folder you can place **pictures** (*.png, *.jpg, *.bmp), **videos**, **PDF**, **XPS** and **HTML files**. As soon as the player application shows a page which contains a hot folder object the hot folder is scanned for displayable files. These are then shown as a dynamic playlist (ordered alphabetically by file name).

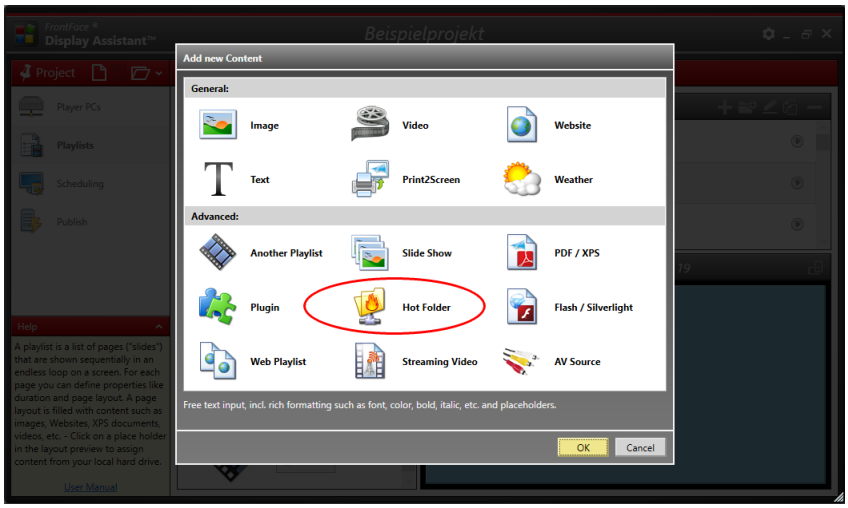

Fig.: Selection of the Hot Folder content type.

This allows you to make modifications and updates to your playlist "on the fly" without having to start the *Display Assistant* and to re-publish your project. Just add, remove or updates files in the hot folder while the player is running.

By using a hot folder you can automate updating your playlists or certain parts of it (e.g. by using external copy scripts).

Notice: In case a hot folder is empty, not accessible or in case it only contains files which cannot be displayed the playlist page that contains the hot folder object will be skipped until any displayable files are found in the hot folder. This behavior is only the case if you have not (!) defined a value of "-1" for the repeat count of the hot folder. Otherwise an opaque area (with the background color of the hot folder) is shown on the screen.

Notice: File formats that are not supported by *FrontFace* are ignored in hot folders. Additionally, all file names that start with an underscore ("_") are being skipped as well. E.g. if you place a file named **`"_test.jpg"`** in a hot folder, the file will not be displayed even though the JPEG format is fully supported by default. If you change the file name to **`"test.jpg"`** the *Player Application* will show the file as expected.

Notice: If the hot folder only contains a single video file and you want to replace this file you have to first copy the new version into the hot folder using a different file name. Then you can delete the old version of the video file. Overwriting an existing video file is not supported if the file

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is currently being played!

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9.15 Interactive Features

FrontFace for Public Displays primarily addresses the non-interactive, autonomous operations mode. However, there are also some features available that cover user interaction with the software, e.g. when using a touch screen device.

The following types of user interaction are supported:

- **Touch screen**
- **Mouse / Stylus**
- **Keyboard and other devices**

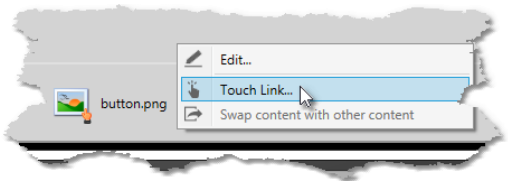
Interaction with mouse, stylus or touch:

- **Navigation of Web pages:** For *"Website"* content you can define when assigning them to a container of a playlist page if you want them to be interactive or not. In case interaction is allowed, the user can e.g. navigate hyperlinks on a Web page. By default the scroll bars of the Web browser are disabled. In case of user interaction, it can be helpful to have the scroll bars visible. The advanced configuration option *"HideWebBrowserScrollbars"* allows you to define whether you want to hide or show scroll bars in general. In case the user has interacted with a Web page the current playlist is paused. After a certain period of time with no further interaction the playlist continues to run automatically. The length of this interval can be defined by the advanced configuration option *"InteractionAutoContinue"*.

- **Navigation of playlist pages:** It is also possible to define a **"touch link"** for any media object in a page of a playlist. This link points to another page in the same playlist and is activated when the user clicks or taps on the media object. Apart from direct links to other pages, you can also use commands such as *next page/previous page* or first *page/last page*. By using this feature it is very easy to create also complex "menu structures".

How to insert a Touch Link:

First, create a normal playlist page and assign media objects to the containers of that page. Then **right-click** on one of the content that is supposed to become an interactive element and select *"Touch Link..."* from the context menu. A dialog appears that allows you to select the target for this touch link. Possible targets are the pages of the current playlist as well as navigation commands such as *next/previous page* or *first/last page*. After you have made a selection, a small hand icon is shown next to the content icon which indicates that this content is now an interactive touch link.



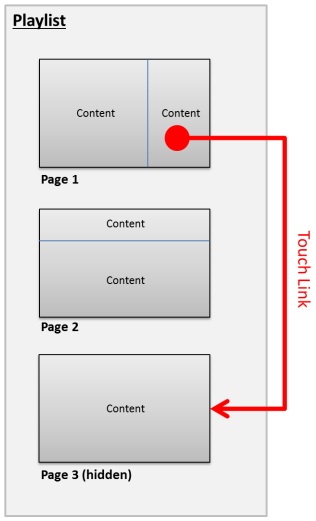


Fig.: Concept of a touch link

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Notice: You can use the *"hidden page"* option from the page properties dialog to prevent that a linked page is shown in the automatic (non-interactive) operation mode. Simply mark these pages as "hidden" in the *Display Assistant*. In this case, these pages are only shown when being invoked by an interactive "touch link" action (either by mouse or touch screen interaction).

Interaction with keyboard (and other devices):

In the page properties dialog of a playlist page you can assign a *"Shortcut"* for this page (F1-F24) and a *"Page Shortcut"* (a numeric value). When a playlist is running and the corresponding shortcut key is pressed on the keyboard the page is displayed immediately. The same happens if the page shortcut number is entered on the numeric keyboard block followed by the **ENTER** key. The *"Hidden"* property of a page allows you prevent a page from being shown when the playlist is running in automatic mode. Only by using either the shortcut or the shortcut key it is possible to display a page that has been marked as hidden.

This functionality can not only be used with common keyboards but also with other specialized devices that are able to emulate keyboard key press events. This includes RFID readers, bar code scanners and ruggedized (programmable) key pad devices.

Furthermore you can also use the cursor keys (left/right and up/down) to control a playlist.

In case you have attached more that one screen to your player PC you can define which screen is supposed to react on user interaction by setting the advanced configuration option *"InteractiveScreen".*

Notice: In case you need more advanced interactive features (e.g. for a touch kiosk terminal), please also have a look at ***"FrontFace for Touch Kiosks"***, another great product by mirabyte!

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9.16 Remotely Controlled Onscreen Notifications

FrontFace for Public Displays is able to show **ad hoc text notifications** on a display while the regular playlist continues to run in the background. This feature can be used to implement either a welcome message for visitors or a call-up system that informs patients or applicants that are waiting for an appointment.

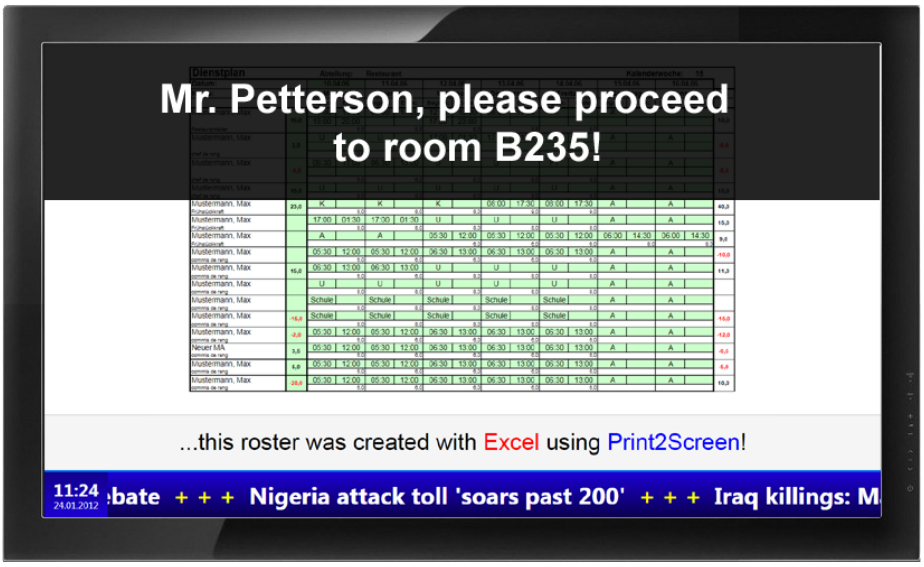
Mr. Petterson, please proceed to room B235!
...this roster was created with Excel using Print2Screen!
11:24
24.01.2012
bate + + + Nigeria attack toll 'soars past 200' + + + Iraq killings: M

Fig.: Notification message as "overlay"

Notifications can be shown as semi-transparent **"overlay"** in the upper third of the screen or as **full screen message** (e.g. for fire alerts or emergencies).

Additionally you can also play an **acoustic signal** when a notification is shown. In the installation folder of *FrontFace for Public Displays* you find the "**`bell.wav`**" file which can either be replaced with a custom wave audio file of your choice or which can be deleted in case you do not want an acoustic signal for notifications.

The **on-screen notification feature** is part of the ***"Remote Control Plugin"*** which is available separately.

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9.17 Digital Signage Screensaver

It is also possible to use *FrontFace for Public Displays* as a screensaver. This is very useful when you want to display digital signage content on interactive kiosk terminals while there is no interaction with the user (like a "stand-by" mode).

As soon as some form of user interaction using either mouse, touch or keyboard happens the player application is closed and the actual, interactive kiosk software can be used again.

How to set up *FrontFace for Public Displays* as screensaver:

1. Install the player software of *FrontFace for Public Displays* on the computer on which you want to run the screensaver.
2. Configure the player software in the normal way (using a Content Update Folder) and publish the content to this player PC using the *Display Assistant*.
3. Now open the *FrontFace for Public Displays* installation folder (by default this is **"C:\Program Files\mirabyte\FrontFace for Public Displays"**) and click on the file **"FrontFace Screensaver.scr"** with the right mouse button and select **"Install"** from the context menu.
4. The Windows dialog for configuring screensavers now appears. Make sure that the **"FrontFace Screensaver"** is selected and define the number of minutes, after which the screensaver is supposed to start if there is no user interaction.
5. Click on **"Settings..."** and select the installation folder of *FrontFace for Public Displays* (the folder in which the file **"FrontFace Player.exe"** resides).
6. Finally, press **"OK"** and close the screensaver settings dialog with **"OK"** as well.

Once the defined interval has elapsed and there was no user interaction so far the player will start automatically and shows the previously published content as long as the user does not interact with the computer by mouse, touch or keyboard.

Notice: Because the screen saver is executed under a different, internal user account on certain Windows versions (e.g. Windows 8) it is possible that the software again asks for the *Content Update Folder* when being startet as screen saver for the first time. You have to specify the *Content Update Folder* once again in that case. After that the screen saver will start without this dialog. Alternatively you can also click on **"Preview"** in the Windows screen saver settings dialog in order to start *FrontFace* as screen saver manually to be able to enter the *Content Update Folder*.

Notice: The screen saver feature even supports systems with multiple screens. In such a case you have to configure a separate screen for every screen that is attached to the PC in the *"Scheduling"* menu of the *Display Assistant* and assign a playlist to it. It is even possible to assign different playlists to the screens in screen saver mode or to limit the screen saver to a subset of the available screens.

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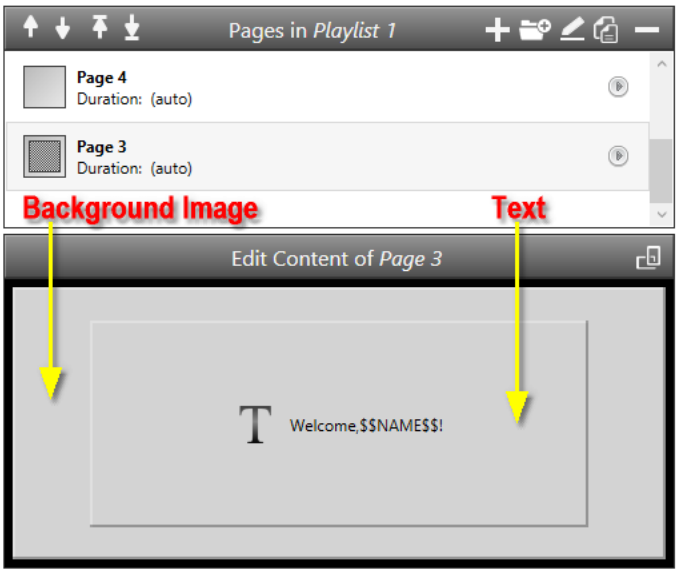
9.18 Overlay Layouts (Layers)

For every playlist page you can choose a so called "page layout" which determines how the screen is actually partitioned. The included layouts also contain a group of layouts called "overlay layouts". In contrast to the other layouts, these are built of layers. Since content elements may be entirely or partially transparent, the overlay layouts provide a lot of potential for interesting design effects.

The layout **"Overlay (center)"** e.g. lets you put two content elements "over" each other. This can be very helpful if you want to implement a great looking welcome board:

First, create a background image (an image file or using Print2Screen) that covers the entire screen, e.g. by using *PowerPoint* and put this one in the background container of the **"Overlay (center)"** page layout. Then add a *"text"* element to top-level container of the layout and make sure that you set it's background color to "transparent". Now you have a way to put custom text on top of a predefined background artwork that can be updated easily e.g. by using the placeholder feature.



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9.19 Creating Custom Templates

Notice: This information addresses developers that are familiar with the Microsoft layout language XAML (please refer to the MSDN documentation for details).

FrontFace for Public Displays comes with some predefined templates and styles for screens and display pages.

- **Page templates** define how a playlist page is partitioned (e.g. a split screen for displaying two contents).
- **Screen templates** define the style of global visual elements on the screen such as colors, font and size of the ticker bar.

It is possible to customize existing templates or to create new ones. All templates are based on the XAML (Extensible Application Markup Language) language by Microsoft. Templates are located in the **"/Screen Layouts/"** and **"/Page Layouts/"** folder of your project folder. For more details on XAML, please refer to MSDN documentation.

For every custom template you should also create a PNG file with the same file name as the XAML file which holds a preview icon for the *Display Assistant*. The PNG files should be 32x32 pixel.

If you are not familiar with XAML, please feel free to contact mirabyte (http://www.mirabyte.com/) in order to request an individually customized template if you require one.

Notice: There are actually two locations in the file system where the page and screen layouts are being stored: One is in the installation folder of *FrontFace for Public Displays* (e.g. **"c:\Program Files (x86)\mirabyte\FrontFace for Public Displays\"**) and the other is in your specific project folder. When you create a new project, all screen and page layouts are copied from the installation folder into the project folder. If you make any modifications to the layouts in the installation folder *-after-* you created your project, these will not take effect (unless you update the templates and plugins of your current project). It is recommended to apply changes to the layouts in the installation folder only if you want the changes to be available for all newly created projects. If you only need to make changes for a specific project, please only modify the layout files in the project folder.

Another good practice is to not modify the existing layouts anyway but to create copies of them with a different name before you edit them. This will also prevent that layouts get overwritten accidently when you update to a newer version of *FrontFace for Public Displays*!

Naming Conventions:

Containers in a layout that are supposed to be filled with content objects in the *Display Assistant* have to be implemented as *"Border"* elements in XAML. The following naming conventions have to be followed:

Screen Templates:
Exactly one element of the type "Border" has to be present which has the name "PART_VIEWPORT":

```
<Border x:Name="PART_VIEWPORT" />
```

Optionally, a screen template may also contain an *"Image"* element named "PART_STATIONLOGO" which represents a placeholder for the station logo of a playlist that can be set in the playlist properties dialog in the Display Assistant.

Page Templates:
At least one, but also multiple elements of the type *"Border"* have to be present that are named

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"PART_X" where X is a running index (starting with 1):

```
<Border x:Name="PART_1" />
```

Other elements (such as *"Grid"*) may use the name "DESIGN_X" (where is is any custom X string). This prevents the elements from being shown in the page editor of the *Display Assistant*. This allows adding decorative elements to a layout which might otherwise interfere with the preview of the layout in the *Display Assistant*.

By using the `tag=""` parameter you can add a semicolon (;) separated list of additional attributes that trigger special functionality:

```
<Border x:Name="PART_1" tag="attrib1;attrib2;attrib3" />
```

The following attributes are available:

AUTOHIDE	Hides the element in case it does not contain a content as one of its' child elements at runtime. This attribute can be used to automatically hide an empty containers in a layout to which no content has been assigned. This is e.g. used in the "blackboard" templates where unused notes are hidden automatically.
RTA_L	Aligns the element at runtime to the left.
RTA_R	Aligns the element at runtime to the right.
RTA_T	Aligns the element at runtime to the top.
RTA_B	Aligns the element at runtime to the bottom.

Notice: In case you want to design your own XAML layouts (either screen or page layouts) and plan to use resource files such as images, please follow these instructions: Place your file(s) in the **"\Media\Static\"** folder of your project in order to make sure that they get copied to the player PC(s) during the publication process. Inside your XAML screen or page layout files, please use the following URL style to reference these files:

Example:

```
<Image Source="##MEDIA_PATH##\image.jpg" />
```

(references the file **"image.jpg"** *in the* **"\Media\Static\"** *folder of the project's file structure)*

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9.20 Command Line Publication

Any media files of contents (images, videos, XPS, etc.) which are used in a playlist of a project are stored in the **"Media"** folder of your display project.

In certain situations it can be desirable to directly exchange or update these files without having to open the *Display Assistant*. This is possible by simply overwriting the existing file(s). However the *Display Assistant* has to be started afterwards in order to invoke the publication process so that the updated files get populated to the player PC(s).

In order to also automate this last step it is possible to remote control the *Display Assistant* via command line switches:

```
Display Assistant.exe "c:\path\to\display\project.ffpdx"
```

Opens the *Display Assistant* and loads the specified project.

```
Display Assistant.exe "c:\path\to\display\project.ffpdx" /publish
```

Opens the *Display Assistant* and loads the specified project. Afterwards, the publication process is started automatically. In case the process finished without any errors the application will close automatically. Otherwise the application will remain running and shows the publication protocol.

```
Display Assistant.exe "c:\path\to\display\project.ffpdx"
/publish="Player PC1,Player PC2,Player PC3"
```

This call invokes the same functionality as the one above but in this case the publication is only done for the enumerated player PCs. Multiple player PCs may be given as comma-separated list.

In order to suppress the graphical user interface of the *Display Assistant* during the automatic publication process, you may add the **`/silent`** command line switch along with the **`/publish`** option. In case the publication process ran into an error the application will exit with an exit code > 0.

Hint: You can easily create **desktop shortcuts** for both *editing* and *publishing* your project directly within the *Display Assistant*. Simply open a project of your choice and click on the *"pin icon"*.

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9.21 Windowed Mode for LED Walls

FrontFace for Public Displays can also be used for LED video walls. In case the LED wall can be addressed as a normal (secondary) screen under the Windows operating system no further adjustments to the *FrontFace* setup are required. Just make sure that you have red the chapter about "Using Multiple Screens".

In case the LED wall uses the so called screen capturing method (which means that a given area of the Windows Desktop is defined which is then "mirrored" to the LED wall) you can configure the *FrontFace Player Application* to run in windowed mode at given coordinates on the Desktop.

First, start the LED wall control software and configure the screen capture rectangle on the Desktop (e.g. at coordinates 100;100 a rectangle of 240x320 pixel). All content within this rectangle is then shown 1:1 on the LED wall. When you now start **"FrontFace Player.exe"** the player application will take over the entire screen as usual and display the playlist in full screen mode.

In order to run the player application only in the given rectangle that is captured by the LED wall you have to start **"FrontFace Player.exe"** with the following command line parameters:

```
"FrontFace Player.exe" /height=320 /width=240 /top=100 /left=100 /
scale=50
```

The parameters **"/height"** and **"/width"** define the desired size of the player window. **"/top"** and **"/left"** define the screen coordinates of the window on the Desktop. All values are given in [Pixel] unit.

Optionally you can also provide the **"/scale"** parameter to apply a scale factor (possible values: 1..100). This means that the actual content of the playlist is rendered at a higher resolution and then is scaled down to fit into the display rectangle. E.g. you can provide a value of 640 for **"/height"** and 480 for **"/width"**. In this case the window size would be 48x640 pixel. By applying a **"/scale"** value of 50 the actual window size is again 240x320. This means that the content is scaled down (a result is that e.g. text elements will appear smaller).

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9.22 Adjusting the Language of the Player Application

Some aspects of the player application are language and/or culture-specific. E.g. there are differences in regards to the way how date/time values are displayed (23:30 vs. 11:30pm), how weather-related data is shown as well as simple, language-specific texts.

By default, the player application uses the language and culture settings of the current Windows installation on which the application is running. In order to change the language and culture-specific settings, you simply need to change the language and region settings of Windows in the Control Panel of the player PC.

Alternatively, you can also set the language and culture directly. Therefore the advanced setting "Language" is provided.

Some languages like Arabic of Hebrew also need to reverse the scrolling direction of the news ticker. This change can be applied by modifying the screen layout which is used by the playlist. The XAML file of the screen layout needs to be modified as described below:

Add the parameter `ScrollDirection="LeftToRight"` to the following XML tag

```
<mc:Ticker x:Name="PART_TICKER" Speed="70">
```

so that the result looks like this:

```
<mc:Ticker x:Name="PART_TICKER" Speed="70"
ScrollDirection="LeftToRight">
```

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10 Advanced Settings

FrontFace for Public Displays offers several advanced configuration options which are explained in detail in the following sections. If you have any technical questions or problems, feel free to contact the mirabyte technical support.

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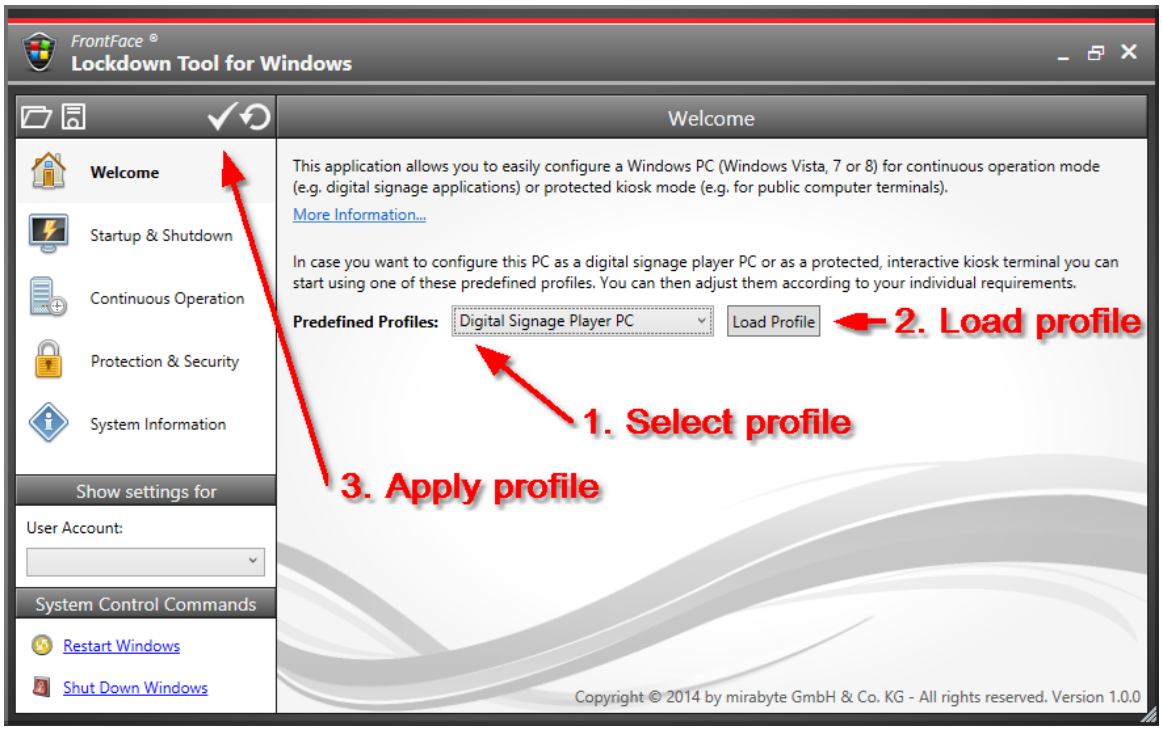
10.1 Continuous Operation Mode Configuration

Since a player PC is usually not used interactively with mouse and keyboard, it is recommended to configure the player PC in a way that it boots automatically without requesting a password and that the *FrontFace Player Application* is also started automatically.

The easiest way to configure a player PC like this is to use the free *FrontFace Lockdown Tool* (**Lockdown.exe**), which can be installed optionally with *FrontFace for Public Displays* or which can also be downloaded separately from the mirabyte Website (http://www.mirabyte.com/go/fflockdown/).


FrontFace ®
Lockdown Tool for Windows
Welcome
Startup & Shutdown
Continuous Operation
Protection & Security
System Information
Show settings for
User Account:
System Control Commands
Restart Windows
Shut Down Windows
This application allows you to easily configure a Windows PC (Windows Vista, 7 or 8) for continuous operation mode (e.g. digital signage applications) or protected kiosk mode (e.g. for public computer terminals).
More Information...
In case you want to configure this PC as a digital signage player PC or as a protected, interactive kiosk terminal you can start using one of these predefined profiles. You can then adjust them according to your individual requirements.
Predefined Profiles:
Digital Signage Player PC
Load Profile
2. Load profile
1. Select profile
3. Apply profile
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For the use with *FrontFace for Public Displays* simply start the *FrontFace Lockdown Tool* on the player PC and select the predefined profile **"Digital Signage Player PC"** on the welcome page of the application. Then, click on **"Load Profile"** and finally click on the button with the check mark in the main menu of the *FrontFace Lockdown Tool* to apply the profile. Please make sure that you select the right Windows user account. It is recommended to create a separate **"standard" type** user account unter Windows for running the *FrontFace for Public Displays* player application.

In many cases it is also useful to setup the player PC for remote administration.

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10.2 Remote Administration of a Player-PC

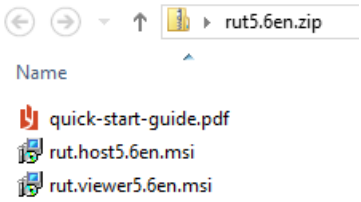
In most cases player PCs are computers that do not have a mouse and keyboard attached or that are remotely located (e.g. behind a screen) and that can only be accessed physically with some effort. In order to be able to administer and maintain the operating system of the player PC remotely, it is recommended to setup a **remote access using "Remote Desktop"**. This means that you can access the player PC over a network connection from another PC. You then see the content of the player PC's screen in a window and can use the mouse and keyboard to seamlessly interact with the player PC.

There are several free and commercial tools available for this purpose (e.g. *TeamViewer, UltraVNC, etc.*). We recommend the application ***"Remote Utilities"* by Usoris Systems**. This software is very easy to use and for up to 10 player PCs, it is free of charge - even for business use.

The following tutorial shows how to install and use *Remote Utilities* to remotely access a player PC:

1.) Download *"Remote Utilities"* from the Website of *Usoris Systems*.

2.) The ZIP file contains two installation components: **`rut.host5.Xde.msi` (Host)** has to be installed on the player PC while **`rut.viewer5.Xde.msi` (Viewer)** is being installed on your normal workstation PC from which you want to remotely access the player PC.



3.) After the installation of the host application has finished you have to set an access password that protects the remote access of the player PC.

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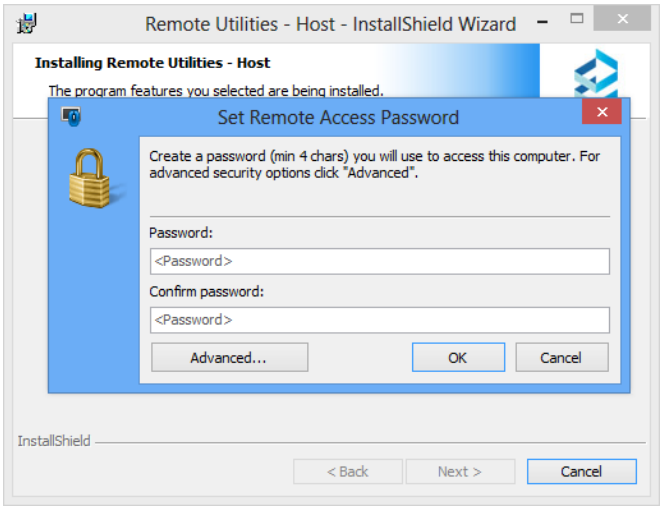
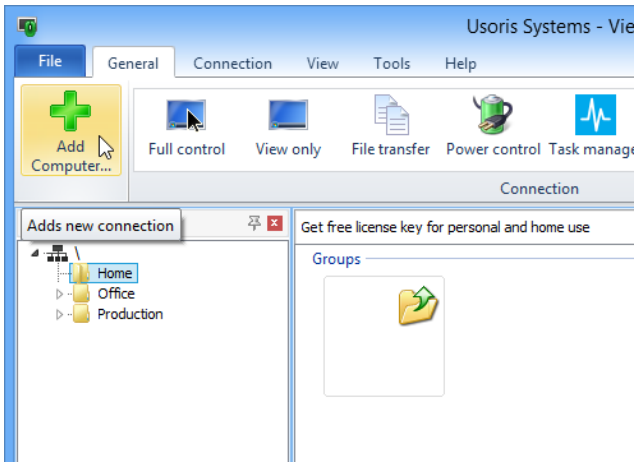

Remote Utilities - Host - InstallShield Wizard
Installing Remote Utilities - Host
The program features you selected are being installed.
Set Remote Access Password
Create a password (min 4 chars) you will use to access this computer. For advanced security options click "Advanced".
Password:
<Password>
Confirm password:
<Password>
Advanced...
OK
Cancel
InstallShield
< Back
Next >
Cancel

4.) After you have installed the viewer application on your PC, click on **"Add Computer..."** and enter the IP address (see below) or the network name of the player PC as well as the previously defined password. Finally, click on **"Full control"**, in order to remotely interact with the player PC or click on **"View only"** in case you only want to see the screen content of the player PC.



Hint: In order to determine the IP address of your player PC, click on **"Start"** and then look for **"Run..."**. Then enter **"cmd"** which will open up the console. In the console, enter **"ipconfig"** (without quotation marks). You then see a list of all network interfaces. The entry **"IPv4 address"** shows the IP address of your player PC in the network.

For a detailed installation instruction and more information about the enhanced features of *Remote Utilities*, please visit the Usoris Systems Website.

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10.3 Using Multiple Screens

With *FrontFace for Public Displays* you can also address multiple screens that are connected to a player PC. Basically two different operation modes are available for multi-screen setups:

Mirrored Content (the same content across multiple screens):
Duplicates, or mirrors, your display content on each display that you connect. Mirrored is the default display option. Actually this mode is handled in the same way as systems that only have one screen. The graphics card of the player PC cares about mirroring the content on all screens. Open **`Display Settings`** by clicking the **`Start button`**, clicking **`Control Panel`**, clicking **`Appearance and Personalization`**, clicking **`Personalization`**, and then clicking **`Display Settings`**. Select the **`"Mirrored"`** option for all screens. In the *Display Assistant* go to the "**`Schedules`**" section and create one screen to which you assign the playlist that you want to show on all screens.

Different Content (different playlists are shown on the screens):
This configuration allows you to show different playlists on the screens which are connected to the player PC. Open **`Display Settings`** by clicking the **`Start button`**, clicking **`Control Panel`**, clicking **`Appearance and Personalization`**, clicking **`Personalization`**, and then clicking **`Display Settings`**. Select the **`"Extended"`** option for all screens. This extends your desktop across all displays. You can move program windows between the displays, which increases your desktop area. This is also the typical setup for multi-screen setups of regular desktop PCs.. In the *Display Assistant* go to the "**`Schedules`**" section and create a screen for each monitor that you have connected to the player PC. You can then assign an individual playlist to every screen.

Notice: Depending on the graphics card you are using the hardware acceleration for video playback may only available on the *primary screen* of the system. The result will be a potentially lower video playback performance on the *secondary screens*. However this issue is fully related to the graphics hardware or its' device driver that you are using.

In case you plan to use one screen as display screen for your playlists and the other one for working with regular Windows applications simultaneous, please also see the section "Shared use of a PC as Workstation PC and Player PC"!

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10.4 Proxy Server Configuration

The *FrontFace Player Application* contains several features (e.g. RSS news ticker, weather data, displaying Web pages, etc.) that require access to the Internet, in case they are used. Therefore it is possible that you might need to modify the proxy configuration of the player software in case your player PCs can only access the Internet through a proxy server.

All proxy-related settings can be adjusted using a normal text editor (e.g. Notepad) in the configuration file **"FrontFace Player.exe.config"** which is located in the installation folder.

In the following the proxy configuration options are described. For a detailed list of all advanced configuration options, please see the section "Advanced Configuration Options".

In case you use a proxy server, make sure that the option **"DisableWebClientProxy"** is set to **"False"**. If set to **"True"**, no (default) proxy server is used for performing Web requests (e.g. news ticker update, weather forecast, etc.). Further proxy configuration settings can be provided directly within the **FrontFace Player.exe.config** file according to the MSDN documentation. The default proxy server configuration is the one that you have defined for the local PC in the Internet Explorer settings. If you have configured the proxy settings of the Internet Explorer correctly, you simply need to set the option **"DisableWebClientProxy"** to **"False"** in order to use the same settings for FrontFace.

Notice: In order to apply the standard proxy configuration that is already defined for the Internet Explorer also to *FrontFace*, simply edit the file **"FrontFace Player.exe.config"** and change the option **"DisableWebClientProxy"** to **"False"**. In most cases this modification is sufficient in oder to operate *FrontFace* successfully behind a proxy server!

Advanced Proxy Configuration:

For a more advanced proxy server configuration you have to edit the file **FrontFace Player.exe.config** and add the following snippet inside the **<configuration>** tag with you custom options:

```
<configuration>
  ...
  <system.net>
    <defaultProxy
      enabled="true|false"
      useDefaultCredentials="true|false">
      <proxy
        usesystemdefault="True|False"
        proxyaddress="http://192.168.1.10:3128"
        bypassonlocal="True|False"
      />
      <bypasslist>
        <add address="[a-z]+\.contoso\.com" />
      </bypasslist>
    </defaultProxy>
  </system.net>
</configuration>
```

You can provide the URL of the proxy server, a bypass list and other options like the desired authentication method. For more details on the available options, please refer to the MSDN documentation.

Warning: Please note the different upper/lower case spelling of the words "true" and "false" (see above). Also make sure that you enter the proxy address as a fully qualified URL (with a protocol prefix and the port number as suffix)!

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In case your proxy server requires and explicit authentication with user name and password and these credentials cannot be reused from the currently logged in Windows user account, there is also an option to provide the proxy server credentials explicitly in the **`FrontFace Player.exe.config`** file. Use the settings **`"WebViewAuthLogin"`** und **`"WebViewAuthPassword"`** from the advanced configuration options for this purpose. However, it is NOT recommended to do so since storing user name and password in a unencrypted form in the settings file implies a severe security risk!

Additional Settings for the internal Web Browser Engine:

In case you are experiencing problems with the proxy configuration and displaying Web pages (especially when showing both Intranet and Internet pages where Intranet pages are not fetched using the proxy), you can explicitly set the proxy configuration for the internal Web browser engine of *FrontFace* using the advanced configuration option **`"WebViewProxy"`**.

Optional Proxy Configuration of the *Display Assistant*:

In case you also need to access the Internet with the *Display Assistant* (e.g. for entering a location for the weather forecast plugin) you also have to apply the proxy settings to the **`Display Assistant.exe.config`** file in the same way as for the previously described **`FrontFace Player.exe.config`** file. Here, you only have to add the <system.net> configuration section if you are using a configuration that differs from the default configuration of the Internet Explorer. If you do not make any changes to the **`Display Assistant.exe.config`** file the Display Assistant will try to determine the default proxy configuration from the default configuration of the Internet Explorer.

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10.5 Advanced Configuration Options

Some configuration options of the *FrontFace Player Application* can be set in the XML configuration file **"FrontFace Player.exe.config"** in the installation folder. You can use a text editor like **Notepad.exe** to edit this file. You also need administrator rights to be able to edit the file in the installation folder. Please make sure that you do not corrupt the file because otherwise the player application may not start correctly and more.

Notice: In order to be able to edit these configuration options, you should have basic knowledge about XML and you should know how to edit a text file!

The configuration options are defined in the XML file as follows:

```
<?xml version="1.0"?>
<configuration>
    ...
    <applicationSettings>
        <mirabyte.FrontFace.Player.Properties.Settings>
            <setting name="TopMost" serializeAs="String">
                <value>False</value>
            </setting>
            ...
        </mirabyte.FrontFace.Player.Properties.Settings>
    </applicationSettings>
    ...
</configuration>
```

The following configuration options are available:

Settings Name (name="...")	**Default Value** <value>...</value>	**Description**
StorageFolder	%PROGRAMDATA %\mirabyte \FrontFace for Public Displays \Content Cache\	The folder in which the player application stores internal data. **Important:** In case you are using the *Enhanced Write Filter (EWF)* of an embedded version of Windows you have to relocate the storage folder to a location or partition that is not protected by EWF!
DefaultScreens	0	Number of the screen(s) which are supposed to be used as player windows. Instead of a single value like "0" for the first screen or "1" for the second screen, it is also possible to provide a list of screens separated by ";", e.g. "0;1" in order to use screen 1 and screen 2 on this computer for displaying content.
TickerUpdateInterval	15	The interval in minutes after which the RSS feed of the ticker is

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Settings Name (name="...")	Default Value <value>...</value>	Description
		checked for updates.
InteractiveScreen	0	The number of the screen which reacts on interaction like page shortcuts. A value of "0" will use the first screen on the computer as interactive one.
HideWebBrowserScrollbars	True	If set to "True", any scrollbars will be hidden if the player application displays Web pages.
DisableWebClientProxy	True	If set to "True", no (default) proxy server is for performing Web requests (e.g. Web pages, news ticker update, weather forecast, etc.). In order to use a proxy server to access Internet resources, this value has to be set to "False". Further proxy configuration settings can be provided directly within the **`FrontFace Player.exe.config`** file according to the MSDN documentation. (see also section "Proxy Server Configuration")
WebViewProxy	auto	This setting allows you to further configure the proxy settings of the internal Web browser engine. The following values are supported: "auto" = uses the default settings of this PC (Internet Explorer settings) "default" = uses the default settings of the player application (pass-through) "none" = no proxy is used at all "myproxy:80" = explicitly uses "myproxy" for all HTTP requests Please note that this settings only impacts the configuration of the application of the setting "DisableWebClientProxy" is set to "True"!
SaveCacheAndCookies	True	If set to "True", the internal Web browser will save and cache cookies.
UserAgent	<empty>	Allows setting a custom user agent string for the internal Web browser.

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Settings Name (name="...")	**Default Value** <value>...</value>	**Description**
EnablePlugins	True	If set to "True" the internal Web browser will activate plugins such as Flash or Sliverlight, if installed.
EnableJavaScript	True	If set to "True" the internal Web browser will execute JavaScript code.
LicenseFile	License.licx	Name (and optional path) of the license file for the player PC.
InteractionAutoContinue	30	When a user interacts with a Web page on a playlist page (using either touch, mouse or the keyboard) the playlist is paused and will continue to play automatically after the given amount of seconds has elapsed with no further interaction on the Web page.
ShowDebugOutput	False	If set to "True" the display will diagnostic information such as memory usage on screen.
ShowOnscreenWarningMessages	True	If set to "True" the display will show any critical errors on screen.
EnableKeyboardShortcuts	True	If set to "True" keyboard interaction will be accepted.
AutoHideMouseCursor	True	If set to "True", the mouse cursor is hidden after some seconds of inactivity.
Language	<empty>	Language/culture of the UI. By default the current culture of the system is used. In order to force e.g. a US English culture, enter "en-US". This language/culture is also used by the internal browser engine ('HTTP_ACCEPT_LANGUAGE').
TopMost	True	If set to "True", all player windows will be shown on top of all other windows.
EnableNumKeyPadSelector	True	If set to "True", the input of page shortcuts using the numeric key pad is allowed.
ShutdownWindowsShell	True	If set to "True", the Windows Shell (explorer.exe) is shut down when the player application is started.

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Settings Name (name="...")	Default Value <value>...</value>	Description
		When the player application is closed, the shell is be restored automatically.
WebViewAuthLogin	none	This optional settings allows you to provide a user name (login) that is used for explicit authentication with a proxy server (see also section "Proxy Server Configuration").
WebViewAuthPassword	none	This optional settings allows you to provide a password that is used for explicit authentication with a proxy server. Since saving a password without encryption in a plain text file is a high security risk, it is recommended that you use the implicit authentication method instead (see also section "Proxy Server Configuration")!
DisableHwAcceleration	True	This option prevents that the hardware acceleration is used on all screens. Please only use this option in case video playback does not work properly or in case you are using a very old graphics adapter.
DisableHwAccelerationOnSecScreens	True	This option prevents that the hardware acceleration is used on other screens than the primary one. This prevents problems with video playback of H.264 encoded video content on secondary screens.
LogErrorsLevel	WARN	This option allows you to configure the verbosity level of the log which is output into the Content Update Folder. The following log levels are available: **`ERROR`**, **`WARN`**, **`INFO`** and **`ALL`**. In order to write a log into the content update folder, this feature has to be enabled in the configuration dialog of the *FrontFace Player Application* (please stat **`FrontFace Player.exe`** with the command line switch **`/configure`** !)
LogFileMaxSize	104857600	Maximum size of the log file of the *FrontFace Player Application* in bytes. If the log file gets bigger

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Settings Name (name="...")	**Default Value** <value>...</value>	**Description**
		than the given value, the file truncated automatically and older log entries are dropped.
LogFile	%PROGRAMDATA%\mirabyte\FrontFace for Public Displays\FrontFace.log.txt	Path to the log file where the *FrontFace Player Application* logs error and warning messages as well as diagnostic information.
ClearBrowserCacheOnStartup	True	If this option is set, the cache of the Web browser engine is cleared every time the *FrontFace Player Application* starts. Otherwise the existing cache will be reused.
EnableRemoteControlService	False	Change the value of this option to "True" if you want to use the Remote Control Service.
RemoteControlServicePort	8066	Defines the port on which the Remote Control Service is listening.
RemoteControlServiceHostname	localhost	Defines the host name of the Remote Control Service. By default this option should always be set to "localhost".

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10.6 Error Log

The *FrontFace Player Application* is able to log any errors or malfunctions in a log file. This is especially helpful in case the reason for an error or a problem cannot be found right away. The log file is located in: **`c:\ProgramData\mirabyte\FrontFace for Public Displays\FrontFace.log.txt`**

You can adjust the level of details of the log file by setting the option **`<level value="LEVEL"/>`** in the **`FrontFace Player.exe.config`** file. You can set one of the following values as *"LEVEL"*:

- **DEBUG** = detailed, verbose output (do not use in production mode!)
- **WARN** = log all errors and warnings (default setting)
- **ERROR** = log errors only

In addition to the internal logging you can also make the player application to output a log into the content update folder. This makes accessing the log file from a remote computer very easy when you are using the local network or Internet-based deployment method. In order to write a log into the Content Update Folder this feature has to be enabled in the configuration dialog of the *FrontFace Player Application* (please launch "**`FrontFace Player Setup`**" from the Windows start menu!). By using the advanced configuration option **`"LogErrorsLevel"`** you can also set the verbosity level of the log output.

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11 Software Deployment and Updates

When a new version of *FrontFace for Public Displays* is released you can update your existing installation in case this is covered by your license. It is also possible to automatically install the software without any user interaction (e.g. for large-scale deployment scenarios with many PCs).

Notice: Please make sure that you always perform an update on both, the player PC(s) as well as on your workstation PC(s) with the *Display Assistant*. Otherwise the *FrontFace Player Application* might not accept an update that has been published using a newer version of the *Display Assistant*.

How can I determine which version of *FrontFace* is currently installed?

In order to determine the currently installed version, please start the *Kiosk Assistant*. This will bring you to the *Welcome Page*. The version number is shown in the lower right corner of that screen. By clicking on the version number you can perform an online check if there are any updates or new versions available to be installed. In order to determine the version number of the *Player Application*, select the file **"FrontFace Player.exe"** in the Windows file explorer and open the context menu (right-click), then select **"Properties"**. In the **"Details"** tab of the properties dialog of that file you can find the version number.

Updating the *FrontFace Player Application*:

Copy the installation package of the new version on the player PC and execute it. Do not make any changes to the options provided by the installation wizard. Simply click on **"Next"** and finally on **"Finish"**. The software is then updated automatically. Both configuration information and any display content are recognized automatically by the update process. It is also possible to run the installation process in an unattended mode on the player PC. In order to do so, execute the installation package with the following command line switch:

```
frontface-pd.exe /SILENT
```

Updating the *Display Assistant*:

Simply execute the installation package of the new version of the computer on which the *Display Assistant* is already installed on. Keep any setup options as the are and simply click on **"Next"** and finally on **"Finish"**. As with the player software, all configuration options are also being kept as well. Like with the player software, you can also use the **/SILENT** command line switch for updating the *Display Assistant* installation.

Further command line options for the automated deployment and installation:

Apart from the **/SILENT** option the following command line switches are available:

Command Line Switch	Description
/SP-	Deactivates the *"This will install... Do you wish to continue?"* prompt on start up.
/VERYSILENT	Disables any kind of interactive elements during the installation process like e.g. error dialogs etc. (to be used instead of the **/SILENT** option!)
/LANG=en	Defines the installation language (**de** = German, **en** = English)
/TYPE=playeronly	Installs only the player application and not the entire setup (which

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	also includes the *Display Assistant*)
/TASKS="autostarticon, Firewall"	A comma-separated list of installation tasks that shall be performed (possible values are: **autostarticon**, **Firewall**, **print2screenDriver**, **createNetShare**)
/LOG="installlog.txt"	Defines a log file into which the setup will log all installation activities for diagnostic purposes

Notice: When you perform an unattended installation using the **/SILENT** command line switch and also install the *Print2Screen feature* (which is default for the full installation type) you have to remember that you need to install the publisher certificate of the Print2Screen driver on the PCs as trusted publisher certificate BEFORE installing *FrontFace* in order to prevent a prompt asking for trusting the driver's publisher. In order to install the certificate you have to install *FrontFace* manually on one PC first. Then open up the application **certmgr.mmc** an export the certificate *"mirabyte GmbH & Co. KG"* from the folder *"Trusted Publishers\Certificates\"* as CER file. This certificate needs to be installed/imported on all PCs on which you want to perform the unattended installation.

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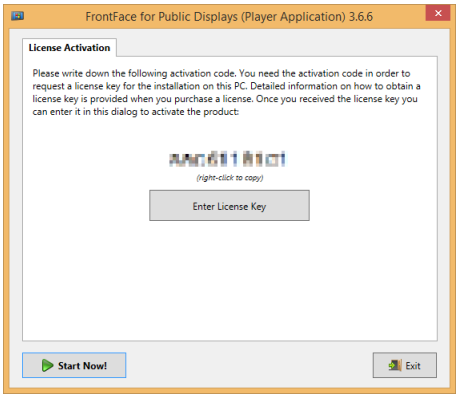
12 License Activation

FrontFace for Public Displays is licensed per player PC (= player PC installation). A license entitles you to use the software on a specific hardware. The *Display Assistant* however can be installed on as many PCs as required at no extra charge. If you have obtained a license of *FrontFace for Public Displays*, please proceed as described here:

Only the **full version** of *FrontFace for Public Displays* can be activated with a license key. The **trial version** cannot be activated. When you purchase a license you will also receive the installation package of the full version. You can upgrade your existing trial version installation using that full version installation package by simply executing the setup again. No configuration data will be lost in that case.

After you have upgraded the trial version with the full version installation package, the *Display Assistant* will no longer show the nag screen on start up and you can activate your license in the player PC as described below.

Activation of the license on the player PC:


FrontFace for Public Displays (Player Application) 3.6.6
License Activation
Please write down the following activation code. You need the activation code in order to request a license key for the installation on this PC. Detailed information on how to obtain a license key is provided when you purchase a license. Once you received the license key you can enter it in this dialog to activate the product:
(right-click to copy)
Enter License Key
Start Now!
Exit

Please install the full version of *FrontFace for Public Displays* on your player PC. Important: Make sure that this is the "final" hardware you are going to use. After you start the player application a notice dialog appears. Switch to the **"License Activation"** tab and write down the **activation code**. In order to request your personal **license key** for this computer, please follow the instructions you received when you purchased the license (delivery/ accompanying documents).

Once you have received the license key, please click on the **"Enter License Key"** button in the dialog with the activation instructions. After you have entered the license key and clicked on **"Save"** the license key is installed. When you start the player application again the demo dialog should not appear any more.

Alternatively you can open the file **"License.licx"** in the installation folder of *FrontFace for Public Displays* using a text editor (e.g. **Notepad.exe**) and enter the license code there manually.

Notice: In case you purchased the license on a USB dongle key (portable license), simply plug the USB dongle into the player PC and start the *FrontFace Player Application*. As long as the dongle is present the software is licensed and can be used without limitations.

Notice: In case you have purchased a subscription/SaaS license, please make sure that your player PC has access to the Internet. This is required because the software will have to validate the license automatically on a mirabyte server from time to time. For normal, hardware-bound licenses or portable licenses (with USB dongle) this restriction does of course not apply! The player application can also be run without any Internet connection at all.

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13 Troubleshooting

This section covers typical problems and describes possible reasons as well as solution proposals. For more more up-to-date information, please also consult the mirabyte Knowledge Base!

Problem: **The *FrontFace Player Application* only shows a black screen or the FrontFace logo and a message that no content has yet been published.**

Solution:

- Please check if the content update folder is set correctly both in the player application as well as in the *Display Assistant*.
- In case the player application shows a short **`"Updating..."`** message when you publish to the player but the screen remains black afterwards, please check if the clock and the date of the player PC are set correctly. Also, make sure that you have assigned a schedule for the playlist on this player PC (in the *Display Assistant*), that is active at the current point of time. Furthermore you should check that you have assigned the playlist to the correct screen of the player PC. If you player PC has only one screen and you assigned a playlist to screen 2, the playlist will not be shown!
- Please make sure that you are running the same *FrontFace* version both, on the player PC and on your workstation with the *Display Assistant*. The *FrontFace Player Application* will not accept updates that have been published using a newer version of the *Display Assistant*.

Problem: **The .NET 4 Framework cannot be installed on Windows XP Embedded ("Unknown Error").**

Solution:

- Prior to installing the .NET 4 Framework on Windows XP Embedded you have to install the Windows Imaging Component (WIC)!

Problem: **Although the license key has been entered in the full version, the player application still shows a dialog stating that the software is not licensed.**

Solution:

- Please make sure that you have entered the license key correctly without any typos.
- Please compare the middle part of the license key (between the two dashes) with the activation code that is shown in the dialog when the player application is started. If these do not match, this license key cannot be used with the player PC (either the hardware has changed or you issued the license key for a different/wrong player PC). Please contact the technical support in this case.

Problem: **When using an intel HD graphics adapter on Windows 7, animation and transition effects may look choppy or show cubic artifacts (tearing).**

Solution:

- Please make sure that you have installed the latest drivers for your graphics card.

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- Make sure that you have enabled the Windows "Aero" desktop theme (which makes the windows look like glass in Windows 7). Only if "Aero" is enabled, the graphics card will use the so called vsync feature correctly that prevents the tearing effects described above.

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14 Further Information and Help

This quick start manual is intended to give you a basic overview of the concepts and the functionality of *FrontFace for Public Displays*. Additional documentation and information as well as free support are available directly from the mirabyte Website. Please visit http://www.mirabyte.com/ for contact information or send an e-mail to support@mirabyte.com!

mirabyte also offers **complementary support** and **consulting services** in case you are either looking for a full-service provider for your digital signage project or if you simply need some additional help.

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